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8 IN THE UNITED STATES DISTRICT COURT  
9 FOR THE WESTERN DISTRICT OF WASHINGTON

10 THE UNITED STATES OF AMERICA, )

11 Plaintiff, )

12 vs. )

Civil Action No. 3:16-cv-5179

13 OCEAN GOLD SEAFOODS, INC., )

14 and )

DEFENDANTS' RY 2017 REPORT

15 OCEAN COLD, LLC, )

16 Defendants. )  
17  
18

19 COME NOW the defendants, by and through their attorneys of record, Ingram, Zelasko  
20 & Goodwin, LLP, and respectfully submit this annual report as required by Article VIII, Section  
21 28, of the Consent Decree.  
22

23 I. BACKGROUND  
24

25 The defendants are filing this report for the three facilities they have operated during RY  
26 2017. Those facilities include the Ocean Gold facility, the Icehouse facility, and the Ocean Cold  
27 facility, however, only the Icehouse facility contained any R-22 during RY 2017.

28 Prior to RY 2017 (March 15, 2017), both Ocean Gold and Ocean Cold ceased using R-22  
29 and converted to R-507.  
30  
31

1 Ocean Gold used R-22 from November 24, 2015 through to June 13, 2016 when all the  
2 R-22 was removed. Thereafter, Ocean Gold was converted to R-507.

3 Ocean Cold used R-22 from March 15, 2016, through to March 13, 2017, when all the R-  
4 22 was removed. Thereafter, Ocean Cold was converted to R-507.

5 The Icehouse continued to use R-22 during RY 2017 and continues to use R-22 as we  
6 enter RY 2018.

7 Under the terms of the Consent Decree entered in the above entitled cause on April 25,  
8 2016 the parties agreed to the following definitions:

- 9 a. "Facility" or "Facilities" shall mean the following facilities owned or operated by  
10 Defendants in Westport, Washington: defendant Ocean Gold's seafood processing  
11 facility located at 1804 North Nyhus Street, defendant Ocean Cold's cold storage  
12 and seafood processing facility located at 1601 Year Out Drive, and the ice  
13 manufacturing facility ("Icehouse") operated by Ocean Gold and located on the  
14 Point Chehalis dock.
- 15 b. "Refrigerant" shall mean any substance consisting in part or whole of a class I or  
16 class II ozone-depleting substance (as listed in 40 C.F.R. Part 82, Subpart A,  
17 Appendices A and B) that is used for heat transfer purposes and provides a  
18 cooling effect.
- 19 c. "Refrigeration Appliance" or "Appliance" shall mean all industrial process  
20 refrigeration appliances, as defined in 40 C.F.R. § 82.152, that are located at the  
21 Defendants' Facilities and that "normally contain" (as defined in 40 C.F.R.  
22 § 82.152) more than 50 pounds of Refrigerant. Large, custom-built assemblages  
23 of refrigeration equipment at a single Facility that share a single Refrigerant  
24 charge and constitute a single closed-loop refrigeration system, are a single  
25 Refrigeration Appliance for purposes of this Decree.

26 Pursuant to the above definitions the defendants are filing this FY 2017 report with the  
27 following understandings:

- 28 d. R-22 is a "substance consisting in part or whole of a class I or class II ozone-  
29 depleting substance" and it "is used for heat transfer purposes and provides a  
30 cooling effect".

1 e. R507 is not “a substance consisting in part or whole of a class I or class II ozone-  
2 depleting substance”, although it “is used for heat transfer purposes and provides  
3 a cooling effect”.

4 Under the terms of the Consent Decree some information is required only for  
5 “refrigeration appliances” or for actions involving the use of the “refrigerant”, whereas, some  
6 information is required with regard to the “facilities”. The defendants have attempted to  
7 distinguish between those parts of the Consent Decree that require responses only for use of R-  
8 22 in appliances and those that require responses because they are simply facilities owned or  
9 operated by the defendants. Any unintentional variation from the strict application of the  
10 definitions shall not be deemed a waiver of any defenses or rights held by the defendants under  
11 the Consent Decree.

12  
13 **II. COMPLIANCE WITH CLEAN AIR ACT, REGULATIONS AT 40 CFR PART 82**  
14 **SUBPART F AND EPCRA IN CONFORMITY TO PARAGRAPH 11**  
15

16 During RY 2017 the defendants complied with all applicable requirements of Section 608  
17 of the Clean Air Act, 42 U.S.C. § 7671g; its implementing regulations at 40 C.F.R. Part 82,  
18 Subpart F; and Sections 312 and 313 of EPCRA, 42 U.S.C. §§ 11022 and 11023.

19 The records of the Icehouse that are detailed hereinafter confirm compliance with  
20 paragraphs 11 (a-c) of the Consent Decree.

21 The defendants continued to have at least one piece of certified, self-contained recovery  
22 or recycling equipment available at each Facility with a Refrigeration Appliance (Icehouse only)  
23 as required in paragraphs 11 (d) of the Consent Decree (see form C in iWorkWise workbook for  
24 Icehouse for details).

25 The defendants had previously certified to the Administrator of the EPA that the above  
26 equipment had be obtained in compliance with paragraphs 11 (e) of the Consent Decree.

27 The defendants did timely submit the EPCRA forms as required under paragraphs 11 (f-  
28 g) of the Consent Decree.

1                                   **III. COPIES OF RECORDS IN COMPLIANCE WITH**  
2                                   **40 CFR § 82.166 AND PARAGRAPH 12.b.iv**

3  
4           As required under 40 CFR § 82.166 and the Consent Decree the defendants complied  
5 with the requirements for records and record retention for its refrigeration appliance at the  
6 Icehouse by using Freon workbooks prepared by iWorkWise, 18551 Aurora Avenue North, Suite  
7 200, Seattle, WA 98133. The primary contact for the defendants at iWorkWise is Amy Duz.

8           Attached to this report is a copy of the RY 2017 iWorkWise R-22 workbooks for the  
9 Icehouse (Appendix 1).

10          After Ocean Gold and Ocean Cold were converted to R507 the defendants continued to  
11 maintain an iWorkWise workbook for the Ocean Gold and Ocean Cold facility. Those  
12 workbooks can be sent to the EPA although those facilities used R507 throughout RY 2017 and  
13 there is no requirement for providing workbooks for non-refrigerant appliances under the  
14 Consent Decree.

15          In compliance with the 40 CFR § 82.166, the defendants maintained and have attached a  
16 copy of the purchase order for (b) (4) of R-22 Freon purchased from Airgas Refrigerants,  
17 Inc. on May 3, 2017 (actual weight of R-22 was 992 pounds). (Appendix 2).

18                   **A. Refrigerant Compliance Management Plan.**

19          The defendants maintained a Refrigerant Compliance Management Plan for the Icehouse  
20 throughout RY 2017. When Ocean Gold and Ocean Cold no longer contained R-22 the  
21 Refrigerant Compliance Management Plan for those two facilities was changed. If the EPA  
22 wants a copy of the R507 RCMP it will be provided, although R507 is not covered by the  
23 Consent Decree.

24          Attached is a copy of the Refrigerant Compliance Management Plan as it existed at the  
25 beginning of RY 2017 (Appendix 3).

26          The defendants are not proposing any changes in the Icehouse Refrigerant Compliance  
27 Management Plan for RY 2018.



1           **B. Supplemental Documents and Materials.**

2           As a supplement to the information provided in the iWorkWise workbooks and the  
3 Refrigeration Requirement Management Plans detailed above, the defendants submit the  
4 following information with regard to the removal of R-22 from the Icehouse.

5           1. Icehouse:

- 6           a. Attached hereto (Appendix 4) is a narrative of the process for removal of R-22  
7 from the Icehouse. The process began on March 6, 2018, and was concluded  
8 on March 9, 2018<sup>1</sup>. This narrative is signed by Pat Walker, Wayne  
9 Christenson, Dylan Denton and Albert A. Carter. Attached to this narrative  
10 are the technicians' certification cards for those individuals. Also attached is a  
11 Certificate of Accuracy for the scales used to weigh the Icehouse's R-22 after  
12 its removal.
- 13           b. The recovered weight of R-22 from the Icehouse was 4,451.00 pounds. The  
14 4,451.00 lbs. of R-22 was reintroduced to the Icehouse.

15  
16                           **IV. INFORMATION AND RECORDS REQUIRED UNDER**  
17                           **REFRIGERANT RELEASE REDUCTION PROGRAM**  
18

19           The Icehouse is the only facility covered by Article VI, Section 16 of the Consent  
20 Decree. The current charge of R-22 in the Icehouse at the beginning of RY 2017 was 3,777.00  
21 pounds (see RY 2016 Report, page 8, Article V (A)).

22           As detailed in Appendix 4, the defendants have performed the beginning of RY 2018  
23 calculations and weighed the R-22 as required by Article VI, Section 18, of the Consent Decree  
24 to determine any loss of R-22. The results and calculations for each of the three facilities are set  
25 forth below.

26           Calculation for Icehouse:

27           Current Charge (RY 2017)	3,777 lbs.
28           Plus additions	+992 lbs.
29           Minus removals	0 lbs.

30  
31           <sup>1</sup> There is a typo in the second paragraph; the date should be March 9, 2018.

1 Minus current charge (RY 2018) -4,451 lbs.  
2 318 lbs.

3 318 lbs. = 6.67 % of RY 2017 starting amount (within allowable limit)

4 As detailed above, no R-22 was present in either the Ocean Gold or Ocean Cold facilities  
5 at the beginning of RY 2017 and no R-22 was present in either at the beginning of RY 2018 so  
6 there is no calculation needed for those facilities under the Consent Decree.

7 No penalties are owed by the defendants under the Refrigerant Release Reduction  
8 Program for RY 2017.

9  
10 **V. CURRENT CHARGE OF R-22 FOR RY 2018**

11 The RY 2018 Current Charge for the only facility owned or operated by the defendants is  
12 as follows:

13 Icehouse - The current charge of R-22 for RY 2018 is set at 4,451.00 lbs.

14  
15 **VI. TRAINING**

16  
17 The Ocean Companies have conducted training of all employees operating the  
18 refrigeration systems as required in Section 13 of the Consent Decree. That training has  
19 consisted of group training and one-on-one training. Attached (Appendix 5) are documents  
20 supporting the training compliance:

- 21 • Training record of April 24, 2017 training by TPC Trainco showing attendees and  
22 curriculum covered.
- 23 • Training record of April 24, 2017 training by IWorkWise showing attendees and  
24 curriculum covered.
- 25 • Training record of July 14, 2017 training by Al Carter showing attendees and  
26 curriculum covered.

27  
28 **VII. THIRD PARTY VERIFIER REPORTS AND RESPONSES FOR RY 2017**

29 Although the TPV Reports and defendants' responses are not due until May 14, 2018 the  
30 defendants are filing the TPV Reports for RY 2017 Report at this time.

Attached as Appendices are copies of the Third Party Verifier's reports as follows:

- A. TPV Report – 1<sup>st</sup> Unannounced Visit dated November 2, 2017 (Appendix 6);
- B. TPV Report – 1<sup>st</sup> Announced Visit dated July 8, 2017 (Appendix 7);
- C. TPV Report – 2<sup>nd</sup> Announced Visit dated January 18, 2018 (Appendix 8);
- D. TPV Report – 2<sup>nd</sup> Unannounced Visit dated April 12, 2018 (Appendix 9);

The defendants have carefully reviewed the Third Party Reports and have attached the following responses to the TPV Reports:

- E. Response to TPV Report dated November 2, 2017 (Appendix 10);
- F. Response to TPV Report dated July 8, 2017 (Appendix 11);
- G. Response to TPV Report dated January 18, 2018 (Appendix 12);
- H. Response to TPV Report dated April 12, 2018 (Appendix 13)

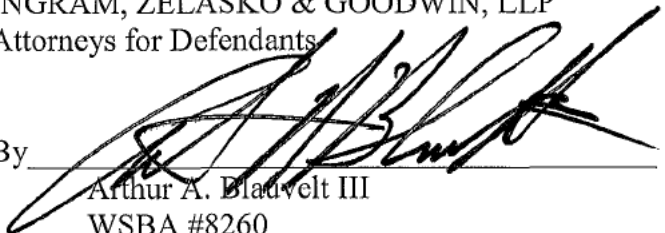
### **VIII. CONCLUSION**

The defendants have fully complied with the terms of the Consent Decree during RY 2017.

DATED: April 12, 2018.

INGRAM, ZELASKO & GOODWIN, LLP  
Attorneys for Defendants

By

  
Arthur A. Bladvelt III  
WSBA #8260


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**VERIFICATION**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

OCEAN GOLD, INC.

OCEAN COLD, INC.

  
Albert A. Carter

Safety and Compliance Manager

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# APPENDIX 1

## iWorkWise Workbook for Icehouse



## CERTIFIED FREON® TECHNICIANS FORM A

[INSTRUCTIONS: List every employee who services Freon® refrigeration systems at this facility, including date of certification, type of certification, and certification number. **Keep a hard or scanned copy of the card on file.**]

NAME	DATE CERTIFIED	TYPE OF CERTIFICATION	CERTIFICATION NUMBER	CARD ON FILE?
Eric Rydman	04/04/2011	UNIVERSAL (may work on all systems)	1036359	YES
		UNIVERSAL (may work on all systems)		YES
		UNIVERSAL (may work on all systems)		YES
Pat Walker	01/26/1994	UNIVERSAL (may work on all systems)	P24EBA5BC12EB4F00	YES
Bill Swaney		UNIVERSAL (may work on all systems)	P53A422ED5603E5A0	YES
Al Carter	01/06/2015	UNIVERSAL (may work on all systems)	1031824	YES
Adela Valdivia	01/06/2015	UNIVERSAL (may work on all systems)	103821	YES
Dylan A. Denton	08/04/2017	UNIVERSAL (may work on all systems)	1045131	YES
		UNIVERSAL (may work on all systems)		YES
		UNIVERSAL (may work on all systems)		YES
John Albanese	01/06/2015	UNIVERSAL (may work on all systems)	1031828	YES
		TYPE 1 (may work on <5 lb. small appliances only)		YES
		TYPE 1 (may work on <5 lb. small appliances only)		YES
		UNIVERSAL (may work on all systems)		YES
Nathan Province	09/01/2015	UNIVERSAL (may work on all systems)	1036356	YES
Wayne Christensen	09/01/2015	UNIVERSAL (may work on all systems)	1036363	YES
		UNIVERSAL (may work on all systems)		YES



## FREON® CONTRACTORS FORM B

[INSTRUCTIONS: List each contract company, contract employee name, type of certification, and certification number for all contract employees who work on Freon® refrigeration system circuits. **Keep a hard or scanned copy of the card of each contract employee on file .]**

NAME OF CONTRACTOR COMPANY	NAME OF CONTRACTOR EMPLOYEE	TYPE OF CERTIFICATION	CERTIFICATION NUMBER	CARD ON FILE?
Apex Refrigeration	Dale McDonald	UNIVERSAL (may work on all systems)	N/A	NO
Apex Refrigeration	Dustin E. McDonald	UNIVERSAL (may work on all systems)	P54AA9C99FF052961	NO
Apex Refrigeration	Andrew R. Palomar	UNIVERSAL (may work on all systems)	P548643C317FDEEA1	NO
Apex Refrigeration	Jordan A. Bradley	UNIVERSAL (may work on all systems)	P11F3F3837C800B01	NO
Apex Refrigeration	Homar Cantu Jr.	UNIVERSAL (may work on all systems)	003-2005	NO
Apex Refrigeration	Shawn S. Aguilar	UNIVERSAL (may work on all systems)	P5EB5300D7BB75780	NO
Apex Refrigeration	Josh B. Jackson	UNIVERSAL (may work on all systems)	P33333ECAE4D82A41	NO
(b) (4)	(b) (4)	UNIVERSAL (may work on all systems)	(b) (4)	YES
(b) (4)	(b) (4)	UNIVERSAL (may work on all systems)	(b) (4)	YES



# INVENTORY OF FREON® RECOVERY OR RECYCLING DEVICES FORM C

[INSTRUCTIONS: Use this form to list recovery equipment owned by the company and available for use at the facility.]

DEVICE NAME	MODEL NUMBER	SERIAL NUMBER	YEAR BUILT	IF BUILT AFTER 1993, DOES DEVICE HAVE A LEGIBLE LABEL?	VACUUM LEVEL IN INCHES OF MERCURY THAT CAN BE ACHIEVED BY DEVICE	HAS OWNER SUBMITTED DEVICE CERTIFICATION FORM TO EPA?
Yellow Jacket	Rover XLT 95760	174182	2016	YES	-30	YES
Promax	RG5410EX	131100014233	2013	NO	-30	YES





## EPA FORM OMB 2060-0256 FORM D

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Each recovery device must be registered with EPA when it is acquired by completing and mailing in an EPA OMB 2060-0256 form. EPA periodically revises their forms. Ensure that when registering a device, the current revision of the EPA form is used (see revision and expiration date on the form). Perform an internet search for "Environmental Protection Agency Refrigerant Recovery or Recycling Device Acquisition Certification Form OMB 2060-0256" to download and print the latest form.



## FREON® SYSTEMS FORM E

[INSTRUCTIONS: List all systems that contain and use Freon®, unless the system has a charge of 5 lbs or less and is permanently sealed. Include air conditioners, refrigerators, chillers, and freezers. Very large systems will have multiple manufacturers, model numbers, and serial numbers – enter “NA” in the manufacturer, model and serial number columns when this is the case. When a system is disposed of, fill out **Form J - Disposal of Freon Equipment**. Start a new workbook at the beginning of each Refrigerant Year (RY).]

\*Charge Method: A = Manufacturer's determination.

B = Calculations based on components, refrigerant, volume, etc.

C = Measurement of amount of refrigerant added or evacuated.

D = Established range based on best available data.

\*\*Use Codes:

CC = Comfort Cooling

COMM = Commercial Refrigeration

IPR = Industrial Process Refrigeration

SYSTEM NAME	SYSTEM LOCATION	INSTALLER	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	YEAR BUILT	REFRIGERANT TYPE	METHOD USED TO DETERMINE CHARGE*	CHARGE IN POUNDS	USE CODE**	DATE OF CHARGE DETERMINATION
IH Main System	Ice House	Unknown	NA	NA	NA	Unk	R-22	C	4,769.00	IPR	5/5/2017



# FREON® INVENTORY BALANCE SHEET FORM G

[INSTRUCTIONS: The information contained in this report is a summary of facility Freon® usage **as calculated automatically** by entries made on **Form F - Freon® Tracking Log**. In order for this sheet to calculate the current location/disposition of all Freon®, all Freon® movement must be listed on Form F. This form is used to show the current amount of refrigerant at the facility and its location, and to provide a running total of the amount released.]

TYPE OF REFRIGERANT	OVERALL CURRENT TOTAL AMOUNT OF REFRIGERANT ON SITE	TOTAL AMOUNT IN INVENTORY	TOTAL AMOUNT IN IH MAIN SYSTEM	TOTAL AMOUNT RELEASED
	(lbs)	(lbs)	(lbs)	(lbs)
R-22	4,769.00	4,451.00	318.00	0.00



# LEAK RATE CALCULATOR FOR SYSTEMS WITH CHARGES OVER 50 LBS FOR USE WHEN CHARGING FORM H

[INSTRUCTIONS: If refrigerant is added to a system with a greater than 50 pound charge, it must be entered on **Form F - Freon Tracking Log** AND this form must be used to calculate the leak rate. Data entered on Form F WILL NOT carry over to this form. Complete a **Form I - Leak Repair Report for Systems with Charges over 50 Lbs** to document the proper repair and verification of all leaks.]

Method 1: Calculation for Leak Rate: Amount of refrigerant added in pounds (due to mechanical failure) / pounds of entire system charge = A. The number of days since last charge = \_\_\_\_/365 = B. A/B \* 100 = \_\_\_\_% of leak rate.

DATE REFRIGERANT ADDED	DATE SYSTEM WAS LAST CHARGED PRIOR TO TODAY	SYSTEM NAME	TYPE OF REFRIG-ERANT	FULL CHARGE (lbs)	TRIGGER LEAK RATE	QUANTITY (lbs) OF REFRIGERANT ADDED (see Form F)	NUMBER OF DAYS SINCE LAST CHARGE	LEAK RATE	LEAK REPAIR REPORT REQUIRED?	NAME OF TECHNICIAN
03/26/2017	12/21/2015	IH Main System	R-22	4,769.00	35%	3,777	461	63%	YES	P. Walker
05/05/2017	03/26/2017	IH Main System	R-22	4,769.00	35%	992	40	190%	YES	P. Walker



# LEAK REPAIR REPORT FOR SYSTEMS WITH CHARGES OVER 50 LBS FORM I

[INSTRUCTIONS: Use this form to document leak repairs and repair verification leak checks whenever a leak is discovered in a system with a charge of over 50 lbs. EPA requires that the leak(s) be repaired within 30 days of discovery if system is kept in operation. An initial verification test of the leak repair must be conducted as soon as is practicable after the repair is completed. A follow-up verification test must be conducted within 30 days (but no sooner than 24 hours) of the system returning to normal operating characteristics and conditions. If the system cannot or will not be repaired within the allotted time frames, refer to 40 C.F.R. § 82.156 - "Required Practices" for specific instructions. **Print a blank copy of this form, fill it out, and keep it on file for at least five (5) years after the termination of the Consent Decree.**]

SYSTEM NAME & LOCATION: Ice House Main System #2 SYSTEM TYPE: IPR 20%

DATE LEAK DISCOVERED: 04/03/2017 DATE OF REPORT: 04/20/2017

TECHNICIAN SUPERVISING REPAIR: Pat Walker (must be within 30 days of leak discovery)

METHODS USED TO DETERMINE LEAK RATE & FULL CHARGE Method C

Describe leak: leak found on Eq valve on tank 1 & 2.

Describe repair: tightened packing nut

Est. amount of refrigerant lost: 1 Date repair completed: 04/03/2017

Technician/Contractor: Pat Walker

## INITIAL VERIFICATION TEST

An initial verification test is required immediately following any leak repairs but BEFORE adding any refrigerant and bringing the system back to normal operating conditions if the system is evacuated, or AFTER the system returns to normal operation if the system was not evacuated.

Initial verification test date: 04/03/2017 Leak test result: no leaks

What test method was used for the initial leak repair verification? Check all that apply.

- ☒ Soap bubble ☐ Fluorescent dye/black light ☒ Electronic detector ☐ Infrared ☐ Ultrasonic detector  
☐ Near infrared ☐ Pressure ☐ Halon torch/gas detection ☐ Vacuum ☐ Other \_\_\_\_\_

Comments: \_\_\_\_\_

## FOLLOW-UP VERIFICATION TEST

A successful follow-up verification test is required at least 24 hours after the initial verification test but within 30 days of the system returning to normal operating characteristics and conditions if the system was shut down. If the system was not shut down, the follow-up verification test must be conducted within 30 days of the initial verification test. In all cases, the system must be at normal operating conditions.

Follow-up verification test date: 04/04/2017 Leak test result: no leaks

What test method was used for the initial leak repair verification? Check all that apply.

- ☒ Soap bubble ☐ Fluorescent dye/black light ☒ Electronic detector ☐ Infrared ☐ Ultrasonic detector  
☐ Near infrared ☐ Pressure ☐ Halon torch/gas detection ☐ Vacuum ☐ Other \_\_\_\_\_

Comments: \_\_\_\_\_

If the follow-up verification test fails, then the equipment must be isolated to repeat the repair or shut down until it is repaired.



# LEAK REPAIR REPORT FOR SYSTEMS WITH CHARGES OVER 50 LBS FORM I

[INSTRUCTIONS: Use this form to document leak repairs and repair verification leak checks whenever a leak is discovered in a system with a charge of over 50 lbs. EPA requires that the leak(s) be repaired within 30 days of discovery if system is kept in operation. An initial verification test of the leak repair must be conducted as soon as is practicable after the repair is completed. A follow-up verification test must be conducted within 30 days (but no sooner than 24 hours) of the system returning to normal operating characteristics and conditions. If the system cannot or will not be repaired within the allotted time frames, refer to 40 C.F.R. § 82.156 - "Required Practices" for specific instructions. **Print a blank copy of this form, fill it out, and keep it on file for at least five (5) years after the termination of the Consent Decree.**]

SYSTEM NAME & LOCATION: Ice House Main System #3 SYSTEM TYPE: IPR 20%

DATE LEAK DISCOVERED: 04/03/2017 DATE OF REPORT: 04/20/2017

TECHNICIAN SUPERVISING REPAIR: Pat Walker (must be within 30 days of leak discovery)

METHODS USED TO DETERMINE LEAK RATE & FULL CHARGE Method C

Describe leak: Leak found on pop valve. Leaking from the threads at the bottom

Describe repair: tightened it up and the leak stopped.

Est. amount of refrigerant lost: 1 Date repair completed: 04/03/2017

Technician/Contractor: Pat Walker

## INITIAL VERIFICATION TEST

An initial verification test is required immediately following any leak repairs but BEFORE adding any refrigerant and bringing the system back to normal operating conditions if the system is evacuated, or AFTER the system returns to normal operation if the system was not evacuated.

Initial verification test date: 04/03/2017 Leak test result: no leaks

What test method was used for the initial leak repair verification? Check all that apply.

- ☒ Soap bubble ☐ Fluorescent dye/black light ☒ Electronic detector ☐ Infrared ☐ Ultrasonic detector  
☐ Near infrared ☐ Pressure ☐ Halon torch/gas detection ☐ Vacuum ☐ Other \_\_\_\_\_

Comments: \_\_\_\_\_

## FOLLOW-UP VERIFICATION TEST

A successful follow-up verification test is required at least 24 hours after the initial verification test but within 30 days of the system returning to normal operating characteristics and conditions if the system was shut down. If the system was not shut down, the follow-up verification test must be conducted within 30 days of the initial verification test. In all cases, the system must be at normal operating conditions.

Follow-up verification test date: 04/04/2017 Leak test result: no leaks

What test method was used for the initial leak repair verification? Check all that apply.

- ☒ Soap bubble ☐ Fluorescent dye/black light ☒ Electronic detector ☐ Infrared ☐ Ultrasonic detector  
☐ Near infrared ☐ Pressure ☐ Halon torch/gas detection ☐ Vacuum ☐ Other \_\_\_\_\_

Comments: \_\_\_\_\_

If the follow-up verification test fails, then the equipment must be isolated to repeat the repair or shut down until it is repaired.



# LEAK REPAIR REPORT FOR SYSTEMS WITH CHARGES OVER 50 LBS FORM I

[INSTRUCTIONS: Use this form to document leak repairs and repair verification leak checks whenever a leak is discovered in a system with a charge of over 50 lbs. EPA requires that the leak(s) be repaired within 30 days of discovery if system is kept in operation. An initial verification test of the leak repair must be conducted as soon as is practicable after the repair is completed. A follow-up verification test must be conducted within 30 days (but no sooner than 24 hours) of the system returning to normal operating characteristics and conditions. If the system cannot or will not be repaired within the allotted time frames, refer to 40 C.F.R. § 82.156 - "Required Practices" for specific instructions. **Print a blank copy of this form, fill it out, and keep it on file for at least five (5) years after the termination of the Consent Decree.**]

SYSTEM NAME & LOCATION: Ice House Main System #4 SYSTEM TYPE: IPR 20%

DATE LEAK DISCOVERED: 04/21/2017 DATE OF REPORT: 04/21/2017

(must be within 30 days of leak discovery)

TECHNICIAN SUPERVISING REPAIR: Wayne Christensen

METHODS USED TO DETERMINE LEAK RATE & FULL CHARGE Method C

Describe leak: NO leak. Replacing equipment

Describe repair: Replaced oil regulator on 150 screw compressor. Recovered and isolated. Pressurized to 200 psi

Est. amount of refrigerant lost: 0 Date repair completed: 04/24/2017

Technician/Contractor: Wayne Christensen

## INITIAL VERIFICATION TEST

An initial verification test is required immediately following any leak repairs but BEFORE adding any refrigerant and bringing the system back to normal operating conditions if the system is evacuated, or AFTER the system returns to normal operation if the system was not evacuated.

Initial verification test date: 04/24/2017 Leak test result: no leaks

What test method was used for the initial leak repair verification? Check all that apply.

- ☒ Soap bubble ☐ Fluorescent dye/black light ☒ Electronic detector ☐ Infrared ☐ Ultrasonic detector  
☐ Near Infrared ☐ Pressure ☐ Halon torch/gas detection ☐ Vacuum ☐ Other \_\_\_\_\_

Comments: \_\_\_\_\_

## FOLLOW-UP VERIFICATION TEST

A successful follow-up verification test is required at least 24 hours after the initial verification test but within 30 days of the system returning to normal operating characteristics and conditions if the system was shut down. If the system was not shut down, the follow-up verification test must be conducted within 30 days of the initial verification test. In all cases, the system must be at normal operating conditions.

Follow-up verification test date: 04/25/2017 Leak test result: no leaks

What test method was used for the initial leak repair verification? Check all that apply.

- ☒ Soap bubble ☐ Fluorescent dye/black light ☒ Electronic detector ☐ Infrared ☐ Ultrasonic detector  
☐ Near Infrared ☐ Pressure ☐ Halon torch/gas detection ☐ Vacuum ☐ Other \_\_\_\_\_

Comments: \_\_\_\_\_

If the follow-up verification test fails, then the equipment must be isolated to repeat the repair or shut down until it is repaired.



# LEAK REPAIR REPORT FOR SYSTEMS WITH CHARGES OVER 50 LBS FORM I

[INSTRUCTIONS: Use this form to document leak repairs and repair verification leak checks whenever a leak is discovered in a system with a charge of over 50 lbs. EPA requires that the leak(s) be repaired within 30 days of discovery if system is kept in operation. An initial verification test of the leak repair must be conducted as soon as is practicable after the repair is completed. A follow-up verification test must be conducted within 30 days (but no sooner than 24 hours) of the system returning to normal operating characteristics and conditions. If the system cannot or will not be repaired within the allotted time frames, refer to 40 C.F.R. § 82.156 - "Required Practices" for specific instructions. **Print a blank copy of this form, fill it out, and keep it on file for at least five (5) years after the termination of the Consent Decree.**]

SYSTEM NAME & LOCATION: Ice House Main System #5 SYSTEM TYPE: IPR 20%

DATE LEAK DISCOVERED: 04/23/2017 DATE OF REPORT: 04/23/2017

(must be within 30 days of leak discovery)

TECHNICIAN SUPERVISING REPAIR: Pat Walker

METHODS USED TO DETERMINE LEAK RATE & FULL CHARGE Method C

Describe leak: Small packing leak on sight glass service valve stem

Describe repair: Tightened packing nut

Est. amount of refrigerant lost: 1 Date repair completed: 04/23/2017

Technician/Contractor: Pat Walker

## INITIAL VERIFICATION TEST

An initial verification test is required immediately following any leak repairs but BEFORE adding any refrigerant and bringing the system back to normal operating conditions if the system is evacuated, or AFTER the system returns to normal operation if the system was not evacuated.

Initial verification test date: 04/23/2017 Leak test result: No leaks

What test method was used for the initial leak repair verification? Check all that apply.

- ☒ Soap bubble ☐ Fluorescent dye/black light ☒ Electronic detector ☐ Infrared ☐ Ultrasonic detector  
☐ Near infrared ☐ Pressure ☐ Halon torch/gas detection ☐ Vacuum ☐ Other \_\_\_\_\_

Comments: \_\_\_\_\_

## FOLLOW-UP VERIFICATION TEST

A successful follow-up verification test is required at least 24 hours after the initial verification test but within 30 days of the system returning to normal operating characteristics and conditions if the system was shut down. If the system was not shut down, the follow-up verification test must be conducted within 30 days of the initial verification test. In all cases, the system must be at normal operating conditions.

Follow-up verification test date: 04/24/2017 Leak test result: No leaks

What test method was used for the initial leak repair verification? Check all that apply.

- ☒ Soap bubble ☐ Fluorescent dye/black light ☒ Electronic detector ☐ Infrared ☐ Ultrasonic detector  
☐ Near infrared ☐ Pressure ☐ Halon torch/gas detection ☐ Vacuum ☐ Other \_\_\_\_\_

Comments: \_\_\_\_\_

If the follow-up verification test fails, then the equipment must be isolated to repeat the repair or shut down until it is repaired.





# LEAK REPAIR REPORT FOR SYSTEMS WITH CHARGES OVER 50 LBS FORM I

[INSTRUCTIONS: Use this form to document leak repairs and repair verification leak checks whenever a leak is discovered in a system with a charge of over 50 lbs. EPA requires that the leak(s) be repaired within 30 days of discovery if system is kept in operation. An initial verification test of the leak repair must be conducted as soon as is practicable after the repair is completed. A follow-up verification test must be conducted within 30 days (but no sooner than 24 hours) of the system returning to normal operating characteristics and conditions. If the system cannot or will not be repaired within the allotted time frames, refer to 40 C.F.R. § 82.156 - "Required Practices" for specific instructions. **Print a blank copy of this form, fill it out, and keep it on file for at least five (5) years after the termination of the Consent Decree.**]

**SYSTEM NAME & LOCATION:** Ice House Main System #6 **SYSTEM TYPE:** IPR 20%

**DATE LEAK DISCOVERED:** 04/26/2017 **DATE OF REPORT:** 04/26/2017

**TECHNICIAN SUPERVISING REPAIR:** Wayne Christensen (must be within 30 days of leak discovery)

**METHODS USED TO DETERMINE LEAK RATE & FULL CHARGE** Method C

**Describe leak:** #4 compressor: Packing nut would not tighten, small leak.

**Describe repair:** changed the service valve.

**Est. amount of refrigerant lost:** 1 **Date repair completed:** 04/26/2017

**Technician/Contractor:** Wayne Christensen

## INITIAL VERIFICATION TEST

An initial verification test is required immediately following any leak repairs but BEFORE adding any refrigerant and bringing the system back to normal operating conditions if the system is evacuated, or AFTER the system returns to normal operation if the system was not evacuated.

**Initial verification test date:** 04/26/2017 **Leak test result:** Good

**What test method was used for the initial leak repair verification? Check all that apply.**

- ☒ Soap bubble ☐ Fluorescent dye/black light ☒ Electronic detector ☐ Infrared ☐ Ultrasonic detector  
☐ Near infrared ☐ Pressure ☐ Halon torch/gas detection ☐ Vacuum ☐ Other \_\_\_\_\_

**Comments:** \_\_\_\_\_

## FOLLOW-UP VERIFICATION TEST

A successful follow-up verification test is required at least 24 hours after the initial verification test but within 30 days of the system returning to normal operating characteristics and conditions if the system was shut down. If the system was not shut down, the follow-up verification test must be conducted within 30 days of the initial verification test. In all cases, the system must be at normal operating conditions.

**Follow-up verification test date:** 04/27/2017 **Leak test result:** Good

**What test method was used for the initial leak repair verification? Check all that apply.**

- ☒ Soap bubble ☐ Fluorescent dye/black light ☒ Electronic detector ☐ Infrared ☐ Ultrasonic detector  
☐ Near infrared ☐ Pressure ☐ Halon torch/gas detection ☐ Vacuum ☐ Other \_\_\_\_\_

**Comments:** \_\_\_\_\_

If the follow-up verification test fails, then the equipment must be isolated to repeat the repair or shut down until it is repaired.



# LEAK REPAIR REPORT FOR SYSTEMS WITH CHARGES OVER 50 LBS FORM I

[INSTRUCTIONS: Use this form to document leak repairs and repair verification leak checks whenever a leak is discovered in a system with a charge of over 50 lbs. EPA requires that the leak(s) be repaired within 30 days of discovery if system is kept in operation. An initial verification test of the leak repair must be conducted as soon as is practicable after the repair is completed. A follow-up verification test must be conducted within 30 days (but no sooner than 24 hours) of the system returning to normal operating characteristics and conditions. If the system cannot or will not be repaired within the allotted time frames, refer to 40 C.F.R. § 82.156 - "Required Practices" for specific instructions. **Print a blank copy of this form, fill it out, and keep it on file for at least five (5) years after the termination of the Consent Decree.**]

**SYSTEM NAME & LOCATION:** Ice House Main System #7 **SYSTEM TYPE:** IPR 20%

**DATE LEAK DISCOVERED:** 05/03/2017 **DATE OF REPORT:** 05/03/2017

**TECHNICIAN SUPERVISING REPAIR:** Wayne Christensen (must be within 30 days of leak discovery)

**METHODS USED TO DETERMINE LEAK RATE & FULL CHARGE** Method C

**Describe leak:** Small oil leak on Carrier #3

**Describe repair:** Valved off, pulled into a vacuum at 20"Hg with a recovery pump into a recovery bottle. Equalized p

**Est. amount of refrigerant lost:** 1 lbs **Date repair completed:** 05/03/2017

**Technician/Contractor:** Dylan Denton

## INITIAL VERIFICATION TEST

An initial verification test is required immediately following any leak repairs but BEFORE adding any refrigerant and bringing the system back to normal operating conditions if the system is evacuated, or AFTER the system returns to normal operation if the system was not evacuated.

**Initial verification test date:** 05/03/2017 **Leak test result:** good

**What test method was used for the initial leak repair verification? Check all that apply.**

- ☒ Soap bubble ☐ Fluorescent dye/black light ☒ Electronic detector ☐ Infrared ☐ Ultrasonic detector  
☐ Near infrared ☐ Pressure ☐ Halon torch/gas detection ☐ Vacuum ☐ Other \_\_\_\_\_

**Comments:** \_\_\_\_\_

## FOLLOW-UP VERIFICATION TEST

A successful follow-up verification test is required at least 24 hours after the initial verification test but within 30 days of the system returning to normal operating characteristics and conditions if the system was shut down. If the system was not shut down, the follow-up verification test must be conducted within 30 days of the initial verification test. In all cases, the system must be at normal operating conditions.

**Follow-up verification test date:** 05/04/2017 **Leak test result:** good

**What test method was used for the initial leak repair verification? Check all that apply.**

- ☒ Soap bubble ☐ Fluorescent dye/black light ☒ Electronic detector ☐ Infrared ☐ Ultrasonic detector  
☐ Near infrared ☐ Pressure ☐ Halon torch/gas detection ☐ Vacuum ☐ Other \_\_\_\_\_

**Comments:** \_\_\_\_\_

If the follow-up verification test fails, then the equipment must be isolated to repeat the repair or shut down until it is repaired.



# LEAK REPAIR REPORT FOR SYSTEMS WITH CHARGES OVER 50 LBS FORM I

[INSTRUCTIONS: Use this form to document leak repairs and repair verification leak checks whenever a leak is discovered in a system with a charge of over 50 lbs. EPA requires that the leak(s) be repaired within 30 days of discovery if system is kept in operation. An initial verification test of the leak repair must be conducted as soon as is practicable after the repair is completed. A follow-up verification test must be conducted within 30 days (but no sooner than 24 hours) of the system returning to normal operating characteristics and conditions. If the system cannot or will not be repaired within the allotted time frames, refer to 40 C.F.R. § 82.156 - "Required Practices" for specific instructions. **Print a blank copy of this form, fill it out, and keep it on file for at least five (5) years after the termination of the Consent Decree.**]

SYSTEM NAME & LOCATION: Ice House Main System #8 SYSTEM TYPE: IPR 20%

DATE LEAK DISCOVERED: 05/10/2017 DATE OF REPORT: 05/10/2017

TECHNICIAN SUPERVISING REPAIR: Wayne Christensen (must be within 30 days of leak discovery)

METHODS USED TO DETERMINE LEAK RATE & FULL CHARGE Method C

Describe leak: Hole in tube on discharge side. Bracket wore a hole in the tube.

Describe repair: shut off compressor & locked out the power. Ran a hose from #3 compressor to receiver using the

Est. amount of refrigerant lost: 10 lbs. Date repair completed: 05/10/2017

Technician/Contractor: Wayne Christensen

## INITIAL VERIFICATION TEST

An initial verification test is required immediately following any leak repairs but BEFORE adding any refrigerant and bringing the system back to normal operating conditions if the system is evacuated, or AFTER the system returns to normal operation if the system was not evacuated.

Initial verification test date: 05/10/2017 Leak test result: good

What test method was used for the initial leak repair verification? Check all that apply.

- ☒ Soap bubble ☐ Fluorescent dye/black light ☒ Electronic detector ☐ Infrared ☐ Ultrasonic detector  
☐ Near infrared ☐ Pressure ☐ Halon torch/gas detection ☐ Vacuum ☐ Other \_\_\_\_\_

Comments: \_\_\_\_\_

## FOLLOW-UP VERIFICATION TEST

A successful follow-up verification test is required at least 24 hours after the initial verification test but within 30 days of the system returning to normal operating characteristics and conditions if the system was shut down. If the system was not shut down, the follow-up verification test must be conducted within 30 days of the initial verification test. In all cases, the system must be at normal operating conditions.

Follow-up verification test date: 05/11/2017 Leak test result: good

What test method was used for the initial leak repair verification? Check all that apply.

- ☒ Soap bubble ☐ Fluorescent dye/black light ☒ Electronic detector ☐ Infrared ☐ Ultrasonic detector  
☐ Near infrared ☐ Pressure ☐ Halon torch/gas detection ☐ Vacuum ☐ Other \_\_\_\_\_

Comments: \_\_\_\_\_

If the follow-up verification test fails, then the equipment must be isolated to repeat the repair or shut down until it is repaired.



# LEAK REPAIR REPORT FOR SYSTEMS WITH CHARGES OVER 50 LBS FORM I

[INSTRUCTIONS: Use this form to document leak repairs and repair verification leak checks whenever a leak is discovered in a system with a charge of over 50 lbs. EPA requires that the leak(s) be repaired within 30 days of discovery if system is kept in operation. An initial verification test of the leak repair must be conducted as soon as is practicable after the repair is completed. A follow-up verification test must be conducted within 30 days (but no sooner than 24 hours) of the system returning to normal operating characteristics and conditions. If the system cannot or will not be repaired within the allotted time frames, refer to 40 C.F.R. § 82.156 - "Required Practices" for specific instructions. **Print a blank copy of this form, fill it out, and keep it on file for at least five (5) years after the termination of the Consent Decree.**]

**SYSTEM NAME & LOCATION:** Ice House Main System #9 **SYSTEM TYPE:** IPR 20%

**DATE LEAK DISCOVERED:** 06/10/2017 **DATE OF REPORT:** 06/10/2017

**TECHNICIAN SUPERVISING REPAIR:** Dylan Denton/ Pat Walker (must be within 30 days of leak discovery)

**METHODS USED TO DETERMINE LEAK RATE & FULL CHARGE** Method C

**Describe leak:** service valve on tank #3 was leaking

**Describe repair:** Tightened the valve and tested with soap and the leak stopped.

**Est. amount of refrigerant lost:** 2 lbs. **Date repair completed:** 06/10/2017

**Technician/Contractor:** Dylan Denton/Pat Walker

## INITIAL VERIFICATION TEST

An initial verification test is required immediately following any leak repairs but BEFORE adding any refrigerant and bringing the system back to normal operating conditions if the system is evacuated, or AFTER the system returns to normal operation if the system was not evacuated.

**Initial verification test date:** 06/10/2017 **Leak test result:** good

**What test method was used for the initial leak repair verification? Check all that apply.**

- ☒ Soap bubble ☐ Fluorescent dye/black light ☒ Electronic detector ☐ Infrared ☐ Ultrasonic detector  
☐ Near infrared ☐ Pressure ☐ Halon torch/gas detection ☐ Vacuum ☐ Other \_\_\_\_\_

**Comments:** \_\_\_\_\_

## FOLLOW-UP VERIFICATION TEST

A successful follow-up verification test is required at least 24 hours after the initial verification test but within 30 days of the system returning to normal operating characteristics and conditions if the system was shut down. If the system was not shut down, the follow-up verification test must be conducted within 30 days of the initial verification test. In all cases, the system must be at normal operating conditions.

**Follow-up verification test date:** 06/11/2017 **Leak test result:** good

**What test method was used for the initial leak repair verification? Check all that apply.**

- ☒ Soap bubble ☐ Fluorescent dye/black light ☒ Electronic detector ☐ Infrared ☐ Ultrasonic detector  
☐ Near infrared ☐ Pressure ☐ Halon torch/gas detection ☐ Vacuum ☐ Other \_\_\_\_\_

**Comments:** \_\_\_\_\_

If the follow-up verification test fails, then the equipment must be isolated to repeat the repair or shut down until it is repaired.



# LEAK REPAIR REPORT FOR SYSTEMS WITH CHARGES OVER 50 LBS FORM I

[INSTRUCTIONS: Use this form to document leak repairs and repair verification leak checks whenever a leak is discovered in a system with a charge of over 50 lbs. EPA requires that the leak(s) be repaired within 30 days of discovery if system is kept in operation. An initial verification test of the leak repair must be conducted as soon as is practicable after the repair is completed. A follow-up verification test must be conducted within 30 days (but no sooner than 24 hours) of the system returning to normal operating characteristics and conditions. If the system cannot or will not be repaired within the allotted time frames, refer to 40 C.F.R. § 82.156 - "Required Practices" for specific instructions. **Print a blank copy of this form, fill it out, and keep it on file for at least five (5) years after the termination of the Consent Decree.**]

**SYSTEM NAME & LOCATION:** Ice House Main System #10 **SYSTEM TYPE:** IPR 20%

**DATE LEAK DISCOVERED:** 07/09/2017 **DATE OF REPORT:** 07/09/2017

**TECHNICIAN SUPERVISING REPAIR:** Pat Walker (must be within 30 days of leak discovery)

**METHODS USED TO DETERMINE LEAK RATE & FULL CHARGE** Method C

**Describe leak:** #4 receiver had a packing leak on the shut off valve, (queen valve)

**Describe repair:** Adjusted the packing nut

**Est. amount of refrigerant lost:** 2 lbs. **Date repair completed:** 07/09/2017

**Technician/Contractor:** Pat Walker

## INITIAL VERIFICATION TEST

An initial verification test is required immediately following any leak repairs but BEFORE adding any refrigerant and bringing the system back to normal operating conditions if the system is evacuated, or AFTER the system returns to normal operation if the system was not evacuated.

**Initial verification test date:** 07/09/2017 **Leak test result:** passed

**What test method was used for the initial leak repair verification? Check all that apply.**

- ☒ Soap bubble ☐ Fluorescent dye/black light ☒ Electronic detector ☐ Infrared ☐ Ultrasonic detector  
☐ Near infrared ☐ Pressure ☐ Halon torch/gas detection ☐ Vacuum ☐ Other \_\_\_\_\_

**Comments:** H-10 pro leak detector

## FOLLOW-UP VERIFICATION TEST

A successful follow-up verification test is required at least 24 hours after the initial verification test but within 30 days of the system returning to normal operating characteristics and conditions if the system was shut down. If the system was not shut down, the follow-up verification test must be conducted within 30 days of the initial verification test. In all cases, the system must be at normal operating conditions.

**Follow-up verification test date:** 7/10/2017 **Leak test result:** passed

**What test method was used for the initial leak repair verification? Check all that apply.**

- ☒ Soap bubble ☐ Fluorescent dye/black light ☒ Electronic detector ☐ Infrared ☐ Ultrasonic detector  
☐ Near infrared ☐ Pressure ☐ Halon torch/gas detection ☐ Vacuum ☐ Other \_\_\_\_\_

**Comments:** \_\_\_\_\_

If the follow-up verification test fails, then the equipment must be isolated to repeat the repair or shut down until it is repaired.



# LEAK REPAIR REPORT FOR SYSTEMS WITH CHARGES OVER 50 LBS FORM I

[INSTRUCTIONS: Use this form to document leak repairs and repair verification leak checks whenever a leak is discovered in a system with a charge of over 50 lbs. EPA requires that the leak(s) be repaired within 30 days of discovery if system is kept in operation. An initial verification test of the leak repair must be conducted as soon as is practicable after the repair is completed. A follow-up verification test must be conducted within 30 days (but no sooner than 24 hours) of the system returning to normal operating characteristics and conditions. If the system cannot or will not be repaired within the allotted time frames, refer to 40 C.F.R. § 82.156 - "Required Practices" for specific instructions. **Print a blank copy of this form, fill it out, and keep it on file for at least five (5) years after the termination of the Consent Decree.**]

**SYSTEM NAME & LOCATION:** Ice House Main System #11 **SYSTEM TYPE:** IPR 20%

**DATE LEAK DISCOVERED:** 10/21/2017 **DATE OF REPORT:** 11/02/2017

(must be within 30 days of leak discovery)

**TECHNICIAN SUPERVISING REPAIR:** Pat Walker

**METHODS USED TO DETERMINE LEAK RATE & FULL CHARGE** Method C

**Describe leak:** Small shaft lead occurs infrequently on the screw compressor. Shaft seal has been ordered.

We will monitor daily for reoccurring leak and fix at the next possible opportunity.

**Describe repair:** Parts on order and will be installed at earliest opportunity

**Est. amount of refrigerant lost:** 1 lb. or less **Date repair completed:** TBA

**Technician/Contractor:** \_\_\_\_\_

## INITIAL VERIFICATION TEST

An initial verification test is required immediately following any leak repairs but BEFORE adding any refrigerant and bringing the system back to normal operating conditions if the system is evacuated, or AFTER the system returns to normal operation if the system was not evacuated.

**Initial verification test date:** 10/21/2017 **Leak test result:** No leak

**What test method was used for the initial leak repair verification? Check all that apply.**

- ☒ Soap bubble ☐ Fluorescent dye/black light ☒ Electronic detector ☐ Infrared ☐ Ultrasonic detector  
☐ Near infrared ☐ Pressure ☐ Halon torch/gas detection ☐ Vacuum ☐ Other \_\_\_\_\_

**Comments:** Checked daily to monitor for a leak

## FOLLOW-UP VERIFICATION TEST

A successful follow-up verification test is required at least 24 hours after the initial verification test but within 30 days of the system returning to normal operating characteristics and conditions if the system was shut down. If the system was not shut down, the follow-up verification test must be conducted within 30 days of the initial verification test. In all cases, the system must be at normal operating conditions.

**Follow-up verification test date:** 10/22/2017 **Leak test result:** No leak

**What test method was used for the initial leak repair verification? Check all that apply.**

- ☒ Soap bubble ☐ Fluorescent dye/black light ☒ Electronic detector ☐ Infrared ☐ Ultrasonic detector  
☐ Near infrared ☐ Pressure ☐ Halon torch/gas detection ☐ Vacuum ☐ Other \_\_\_\_\_

**Comments:** will continue to monitor daily

If the follow-up verification test fails, then the equipment must be isolated to repeat the repair or shut down until it is repaired.



# DISPOSAL OF FREON®-CONTAINING EQUIPMENT FORM J

[INSTRUCTIONS: Keep disposal records on-site for at least five (5) years after the termination of the Consent Decree. Print a blank form, fill it out, and keep it on file, and/or scan and keep electronically to document disposal, transfer, or sale of an appliance. If the appliance is being sold or transferred to another facility, attach the receipt from the receiving company to this record.]

Equipment Name: \_\_\_\_\_

Manufacturer: \_\_\_\_\_

Model Number: \_\_\_\_\_

Serial Number: \_\_\_\_\_

Technician: \_\_\_\_\_

Refrigerant: \_\_\_\_\_

Amount Recovered: \_\_\_\_\_

Recovery Unit Used: \_\_\_\_\_

Vacuum Level: \_\_\_\_\_

Oil recovered? ☐ YES

Salvage Company: \_\_\_\_\_

*All refrigerant that has not leaked previously from this appliance has been recovered from this appliance in accordance with 40 CFR 82.156(f) or 40 CFR 82.156(g).*

Signature: \_\_\_\_\_

Print Name: \_\_\_\_\_

Company Name: \_\_\_\_\_

Address: \_\_\_\_\_

Date Recovered: \_\_\_\_\_

## REQUIRED EVACUATION LEVELS FOR APPLIANCES WITH CHARGES OF MORE THAN 5 POUNDS

Type of Appliance	Recovery Units Manufactured Date	
	Before Nov 15, 1993	After Nov. 15, 1993
HCFC-22 appliance, or isolated component of such appliance, normally containing <b>less than 200 pounds</b> of refrigerant.	0	0*
HCFC-22 appliance, or isolated component of such appliance, normally containing <b>200 pounds or more</b> of refrigerant.	4"	10"
Very High Pressure appliance.	0	0
Other high-pressure appliance, or isolated component of such appliance, normally containing <b>less than 200 pounds</b> of refrigerant.	4"	10"
Other high-pressure appliance, or isolated component of such appliance, normally containing <b>more than 200 pounds</b> of refrigerant.	4"	15"
Low-Pressure Appliance.	25"	25 mm Hg absolute

## REQUIRED EVACUATION LEVELS FOR APPLIANCES WITH CHARGES OF 5 POUNDS OR LESS

All Small Appliances  Any <u>ONE</u> of the 3 methods below is acceptable.	Recovery Units Manufactured Date	
	Before Nov 15, 1993	After Nov. 15, 1993
When compressor is working	80%	90%
When compressor is not working	80%	80%
Mercury vacuum level	4"	4"

USE THIS PORTION ONLY IF SYSTEM OR APPLIANCE WILL BE SOLD OR TRANSFERRED TO ANOTHER FACILITY, OR COMPANY.

Transferred To: \_\_\_\_\_

Date: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Phone: \_\_\_\_\_

Address: \_\_\_\_\_

Sent Via: \_\_\_\_\_

**IMPORTANT: Attach receipt from receiving facility/company. Keep records for at least five (5) years after the termination of the Consent Decree.**



## REFRIGERANT RELEASE CALCULATION FORM M

[INSTRUCTIONS: To comply with the Consent Decree, use this form to calculate the amount of refrigerant released over the Refrigerant Year (RY). Complete this calculation at the beginning of each RY, beginning with the start of RY 2017. Enter the new Current Charge (RY X + 1) for the RY that has just started and the additions and removals that occurred over the RY that has just ended. Retain this record for at least five (5) years after the termination of the Consent

SYSTEM NAME	CURRENT CHARGE (RY X)	CURRENT CHARGE (RY X + 1)	ADDITIONS (RY X)	REMOVALS (RY X)	AMOUNT RELEASED IN RY X	PERCENTAGE OF RY X RELEASED
	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(%)
IH Main System	4,769.00	4,451.00	0.00	0.00	318.00	6.67%





## FREON® SYSTEM MAINTENANCE LOG FORM N

[INSTRUCTIONS: Use this form to log all maintenance, repairs, and leaks in between charging the system. When charging the system, enter the amount actually charged into the system on **Form F - Freon® Tracking Log**. Also, perform a leak rate calculation on **Form H - Leak Rate Calculator for Systems with Charges over 50 lbs. for use when Charging**. The amount charged into the system to replace that which leaked can be compared to the estimates on this page to improve estimates, and if large discrepancies exist between estimates and actuals, to trigger prompt investigation of potential unidentified leaks.]

**SYSTEM:** Ice House Main System

DATE	DESCRIPTION OF SERVICE	ESTIMATED LBS LOST	TECHNICIAN
03/15/2017	150 HP screw compressor: removed coalesor filters, cleaned housing. Rebuilt float that returns oil to slow side. Removed and replaced 1/2" oil drain valve from bottom of oil tank due to rust on the stem. Two (2) 125 HP carrier compressors. Removed case hard hole comvers to inspect rod ends. removed oil pick up screens, cleaned and reinstalled.	0	PW/WC/DD
03/16/2017	150 HP screw compressor: Installed new coalesor filters. Removed and installed new oil filters. Pressured oil tank to 200 psi with nitrogen. Receiver for 150 HP screw compressor: closed valved to isolate tank from system, pressured to 0 psi with nitrogen. Replaced bottom valve with a new 3/4" angle valve due to age of valve rusted stem some packing leaks during the year. Pressured tank to 200 lbs. psi.	0	PW/WC/DD
03/17/2017	two (2) 125 HP screw compressors: Replace hand hole covers with new gaskets. Pressured case's to 200 psi. 150 HP screw compressor: found leak on service valve on low side. Dumped pressure replaced valve and pressured to 200 psi with nitrogen.	0	PW/WC/DD
03/18/2017	Weekend. No crew working.	0	PW
03/19/2017	Weekend. No crew working.	0	PW
03/20/2017	All compressors & receivers held pressure. Dumped pressure. Began pulling vacuum with pumps. 150 HP screw compressor: removed oil pump motor rebuilt with new bearing and reinstalled.	0	PW/WC/DD
03/21/2017	Evaporators: Valved off compressors from the system. Removed all freon from A & B compressors with recovery pump into recovery bottle. Pressured compressors to 10 psi with nitrogen to push oil out of case. Recovered around 2 gallons. Replaced with new oil. vacuumed after pressure check with nitrogen. Vacuumed to 15"Hg. Opened valves to put back into service. Roded out A & B condensers for evaporators. Roded out oil cool on 150 HP screw compressor. Started evaporator compressors to cool ice bins.	0	PW/WC/DD
03/22/2017	150 HP screw compressor: vacuum held good, pumped in 70 gallons of oil. Turned on heaters for oil. Two (2) 125 HP carrier compressors: vacuum held good, pumped in 12 gallons of oil into each compressor's case. Turned on crank case heaters.	0	PW/WC/DD



## FREON® SYSTEM MAINTENANCE LOG FORM N

**SYSTEM:** Ice House Main System

DATE	DESCRIPTION OF SERVICE	ESTIMATED LBS LOST	TECHNICIAN
03/23/2017	#3 & #4 125 HP carrier compressors: using 3/8" service hose from a 1000 lb recovery bottle to receiver for #3 still in vacuum, pulled freon in until pressure equalized between tank & bottle. Valved off and moved hose to suction side of compressor and pulled the balance of freon into the system with compressor running. (803 lbs. R-22). using the same method serviced #4 with (800 lbs. R-22). Made ice for the rest of the day. Disassembled column site glass, cleaned and painted.	0	PW/WC/DD
03/24/2017	We found a small leak on packing gland on 1/2" service valve. Tightened packing gland and check with soap, no leaks. Reassembled column sight glass installed on receiver for 150 HP screw compressor. Pressured and checked with soap, no leaks, vacuumed to 15"Hg and will let set over night. <b>Form I: (#1) created for service gland.</b>	1	PW/WC/DD
03/25/2017	150 HP screw compressor: Receiver held at 15" Hg vacuum. Using service hose between 1000 lb recovery bottles & receiver began pulling in freon. After pressure equalized, used recovery pump to pull pressure off receiver & back to recovery bottle pushing freon from tank to receiver. Once receiver had enough freon in the tank to run, moved service hose to low side on screw, opened valves & began making ice pulling in freon. Pulled all bottles to 6 lbs pressure with screw compressor. <b>Form I: (#1) passed the follow up test.</b>	0	PW/WC/DD
03/26/2017	Day shift: leak checks marked off as performed. Pumped all recovery bottles into a vacuum using Yellow Jacket recovery pump. Running service hoses from vapor side of the bottle to the low side of the screw compressor. No night shift. <b>All Freon (R-22) has been charged into the system (3777 lbs.) entered on Form F.</b>	0	PW/WC/JA
03/27/2017	Day shift: leak checks marked off as performed. All compressors running and making ice. Back in service. No night shift.	0	PW/WC/DD
03/28/2017	Day shift: leak checks marked off as performed. Dryer filter changes on all receivers. Valved off housings, pumped down using #3 carrier compressor to 0 psi. Opened housings and removed used dryer blocks and replaced with new. Closed housing pressured to 200 psi and checked with soap, no leaks. Vacuumed to 15"Hg and put back into service.	0	PW/WC/DD
03/29/2017	Day shift: leak checks marked off as performed. Maintenance complete and system back on line and ready to go. Working day shift only no ice being made.	0	DD
03/30/2017	Day shift: leak checks marked off as performed. No night shift;	0	DD
03/31/2017	Day shift: leak checks marked off as performed. No night shift;	0	WC
04/01/2017	Day shift: leak checks marked off as performed. No night shift;	0	PW
04/02/2017	Day shift: leak checks marked off as performed. No night shift;	0	PW



## FREON® SYSTEM MAINTENANCE LOG FORM N

**SYSTEM:** Ice House Main System

DATE	DESCRIPTION OF SERVICE	ESTIMATED LBS LOST	TECHNICIAN
04/03/2017	Day shift: leak checks marked off as performed. Equalizer valve on tank 1 & 2 leaking. Tightened packing nut, no more leak. Pop off valve was leaking from threads on bottom, tightened nuts, no more leak. <b>Form I: (#2) created for Equalizer valve on tank 1 &amp; 2. Form I: (#3) created for pop off valve.</b>	2	DD/PW
04/04/2017	Day shift: leak checks marked off as performed. <b>Form I: (#2) passed the follow up test. Form I: (#3) passed the follow up test.</b> No night shift;	0	DD
04/05/2017	Day shift: leak checks marked off as performed. No night shift;	0	DD
04/06/2017	Day shift: leak checks marked off as performed. No night shift;	0	DD
04/07/2017	Day shift: leak checks marked off as performed. No night shift;	0	DD
04/08/2017	Day shift: leak checks marked off as performed. No night shift;	0	PW
04/09/2017	Day shift: leak checks marked off as performed. No night shift;	0	PW
04/10/2017	Day shift: leak checks marked off as performed. No night shift;	0	DD
04/11/2017	Day shift: leak checks marked off as performed. No night shift;	0	DD
04/12/2017	Day shift: leak checks marked off as performed. No night shift;	0	DD
04/13/2017	Day shift: leak checks marked off as performed. No night shift;	0	DD
04/14/2017	Day shift: leak checks marked off as performed. No night shift;	0	DD
04/15/2017	Day shift: leak checks marked off as performed. No night shift;	0	DD
04/16/2017	Day shift: leak checks marked off as performed. No night shift;	0	DD
04/17/2017	Day shift: leak checks marked off as performed. No night shift;	0	DD
04/18/2017	Day shift: leak checks marked off as performed. No night shift;	0	DD
04/19/2017	Day shift: leak checks marked off as performed. No night shift;	0	DD
04/20/2017	Day shift: leak checks marked off as performed. No night shift;	0	DD
04/21/2017	Day shift: leak checks marked off as performed. No night shift. Ordered pressure regulator from APEX. We were getting erratic pressure on the oil regulator. <b>Form I: (#4) created for replacing oil regulator. No leak found.</b>	0	PW
04/22/2017	Day shift: leak checks marked off as performed. No night shift;	0	PW
04/23/2017	Day shift: leak checks marked off as performed. No night shift. Small packing leak on sight glass service valve stem. <b>Form I: (#5) created for small packing leak on sight glass service stem.</b>	1	PW



## FREON® SYSTEM MAINTENANCE LOG FORM N

**SYSTEM:** Ice House Main System

DATE	DESCRIPTION OF SERVICE	ESTIMATED LBS LOST	TECHNICIAN
04/24/2017	Day shift: leak checks marked off as performed. No night shift. Oil tank on screw compressor is pulled into a vacuum. Opened oil line from regulator to tank, pulling oil into the tank. Valved off tank again to remove & replace regulator. Removed regulator M/X X9668, Type A4LL, Refrigerating specialties Co. Replaced with type A4AL part. Pressurized with nitrogen to 200 psi. Leak checked with soap and found no leaks. Dumped nitrogen pressure and put on a vacuum pump. <b>Form I: (#4) installed regulator and it passed the initial test. Form I: (#5) passed the follow up test.</b>	0	DD
04/25/2017	Day shift: leak checks marked off as performed. No night shift. Vacuum held over night. Closed service valve and open oil lines and put back into service. Started making ice. Pulled freon back into low side on screw from liquid side on recovery bottle. <b>Form I: (#4) passed the follow up test</b>	0	DD
04/26/2017	Day shift: leak checks marked off as performed. No night shift. Found small leak on #4 receiver service valve. Pulled off & replaced. Pressure checked with nitrogen up to 250 psi. No leaks found, put back into service. <b>Form I: (#6) created for #4 receiver.</b>	0	DD
04/27/2017	Day shift: leak checks marked off as performed. <b>Form I: (#6) passed the follow up test.</b> No night shift.	0	DD
04/28/2017	Day shift: leak checks marked off as performed. No night shift;	0	DD
04/29/2017	Day shift: leak checks marked off as performed. No night shift;	0	DD
04/30/2017	Day shift: leak checks marked off as performed. No night shift;	0	DD
05/01/2017	Day shift: leak checks marked off as performed. No night shift;	0	DD
05/02/2017	Day shift: leak checks marked off as performed. No night shift;	0	DD
05/03/2017	Day shift: leak checks marked off as performed. No night shift. Small oil leak on carrier #3. Oil filter housing. Valved off compressor at high and low sides. Pulled into a vacuum at 20" Hg with recovery pump into recovery bottle. Equalized pressure to 0" Hg with nitrogen. Removed & replaced valve on top of oil filter housing. Pressurized to 200 lbs with nitrogen, found no leaks, dumped nitrogen. Pulled into a vacuum and put back into service. <b>Form I: (#7) created for #3 Carrier unit.</b>		DD
05/04/2017	Day shift: leak checks marked off as performed. <b>Form I: (#7) passed the follow up test.</b> No night shift;	0	DD



# FREON® SYSTEM MAINTENANCE LOG FORM N

**SYSTEM:** Ice House Main System

DATE	DESCRIPTION OF SERVICE	ESTIMATED LBS LOST	TECHNICIAN
05/05/2017	Day shift: leak checks marked off as performed. No night shift. Adding Freon into the Ice House system. Bottle weight 1331 lbs. on the hanging scale. Ran hose from bottle to #3 receiver low side 7 pulled in 131 lbs. Shut valve on tank hose & compressor. Moved hose to low side on #4 compressor opened valves to pull in 160 lbs. Closed valve on tank hose & compressor. Moved hose to low side of 150 hp screw compressor to pull in the balance of the bottle (701 lbs. of R-22) total weight added to Ice House system (992 lbs.) <b>See Form F for addition. Ice House total now 4769 lbs.</b>	0	DD
05/06/2017	Day shift: leak checks marked off as performed. No night shift;	0	DD
05/07/2017	Day shift: leak checks marked off as performed. No night shift;	0	WC
05/08/2017	Day shift: leak checks marked off as performed. No night shift;	0	DD
05/09/2017	Day shift: leak checks marked off as performed. No night shift;	0	DD
05/10/2017	Day shift: leak checks marked off as performed. Small hole in discharge tube from compressor to receiver caused by the bracket wearing a hole in the tube. Shut off compressor & locked out power. Ran hose from #3 compressor to receiver. Using #3 compressor pulled receiver to 0 psi. Valved off the #3 compressor and cleaned pipe and brazed hole. Pressurized with nitrogen to 25 psi and checked for leaks on brazed area. Found no leaks. Pressurized to 200 psi and let sit for 6 hours. Pressure held and we dumped the pressure. Brought to vacuum at 25hg. Valved off and rean hose from #4 compressor to liquid side on evaporator compressor. Turned on the power to evaporator compressor. Opened low side and high side valves and pulled liquid back into the system. Total Freon loss estimated at 10 lbs. <b>Form I: (#8) created for #3 compressor.</b>	10	WC
05/11/2017	Day shift: leak checks marked off as performed. <b>Form I: (#8) passed the follow up test.</b> No night shift;	0	DD
05/12/2017	Day shift: leak checks marked off as performed. No night shift;	0	DD
05/13/2017	Day shift: leak checks marked off as performed. No night shift;	0	DD
05/14/2017	Day shift: leak checks marked off as performed. No night shift;	0	DD
05/15/2017	Day shift: leak checks marked off as performed. No night shift;	0	DD
05/16/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed. Now running on night shift.	0	DD/PW
05/17/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	DD/PW
05/18/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	DD/PW



# FREON® SYSTEM MAINTENANCE LOG FORM N

**SYSTEM:** Ice House Main System

DATE	DESCRIPTION OF SERVICE	ESTIMATED LBS LOST	TECHNICIAN
05/19/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	DD/PW
05/20/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	DD
05/21/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
05/22/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
05/23/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
05/24/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
05/25/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
05/26/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/WC
05/27/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
05/28/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
05/29/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
05/30/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
05/31/2017	Day shift: leak checks marked off as performed. Night shift: No night shift.	0	PW
06/01/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
06/02/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
06/03/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
06/04/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD



## FREON® SYSTEM MAINTENANCE LOG FORM N

**SYSTEM:** Ice House Main System

DATE	DESCRIPTION OF SERVICE	ESTIMATED LBS LOST	TECHNICIAN
06/05/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
06/06/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
06/07/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
06/08/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
06/09/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
06/10/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed. We found a leak on tank #3 on the bottom service valve. Tightened the fittings and the leak stopped. <b>Form I: (#9) created for Tank #3. Passed the initial leak test.</b>	0	PW/DD
06/11/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed. <b>Form I: (#9) passed the follow up leak test passed.</b>	0	PW/DD
06/12/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
06/13/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
06/14/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
06/15/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
06/16/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
06/17/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
06/18/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
06/19/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
06/20/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD





## FREON® SYSTEM MAINTENANCE LOG FORM N

**SYSTEM:** Ice House Main System

DATE	DESCRIPTION OF SERVICE	ESTIMATED LBS LOST	TECHNICIAN
06/21/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
06/22/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
06/23/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
06/24/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
06/25/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
06/26/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
06/27/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
06/28/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
06/29/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
06/30/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
07/01/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
07/02/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
07/03/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/WC
07/04/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
07/05/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
07/06/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD





## FREON® SYSTEM MAINTENANCE LOG FORM N

**SYSTEM:** Ice House Main System

DATE	DESCRIPTION OF SERVICE	ESTIMATED LBS LOST	TECHNICIAN
07/07/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
07/08/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
07/09/2017	Day shift: leak checks marked off as performed. The #4 receiver queen valve had a small packing leak. Adjusted the packing nut and tested with soap bubbles. Initial test passed. Will check again in 24 hours. Night shift: leak checks marked off as performed. <b>Form I: (#10) created for #4 Receiver. Passed the initial test.</b>	2	PW/DD
07/10/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed. <b>Form I: (#10) passed the follow up test.</b>	0	PW/DD
07/11/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
07/12/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
07/13/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
07/14/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
07/15/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
07/16/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
07/17/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
07/18/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
07/19/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD/NW
07/20/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	NW/WC
07/21/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	NW/DD



# FREON® SYSTEM MAINTENANCE LOG FORM N

**SYSTEM:** Ice House Main System

DATE	DESCRIPTION OF SERVICE	ESTIMATED LBS LOST	TECHNICIAN
07/22/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	NW/WC
07/23/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	NW/WC
07/24/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	NW/DD
07/25/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	NW/DD
07/26/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	NW/DD
07/27/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
07/28/2017	Day shift: leak checks marked off as performed. Night shift: no night shift.	0	PW/DD
07/29/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
07/30/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
07/31/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
08/01/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
08/02/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
08/03/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
08/04/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
08/05/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
08/06/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
08/07/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD



## FREON® SYSTEM MAINTENANCE LOG FORM N

**SYSTEM:** Ice House Main System

DATE	DESCRIPTION OF SERVICE	ESTIMATED LBS LOST	TECHNICIAN
08/08/2017	Day shift: leak checks marked off as performed. Night shift: No night shift.	0	PW
08/09/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
08/10/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
08/11/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
08/12/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
08/13/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
08/14/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
08/15/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
08/16/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
08/17/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
08/18/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
08/19/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/WC
08/20/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
08/21/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
08/22/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
08/23/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
08/24/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD



## FREON® SYSTEM MAINTENANCE LOG FORM N

**SYSTEM:** Ice House Main System

DATE	DESCRIPTION OF SERVICE	ESTIMATED LBS LOST	TECHNICIAN
08/25/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
08/26/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/WC
08/27/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
08/28/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
08/29/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
08/30/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
08/31/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
09/01/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
09/02/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
09/03/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
09/04/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
09/05/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/DD
09/06/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/WDC
09/07/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/JA
09/08/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	DD/WC
09/09/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/WC



## FREON® SYSTEM MAINTENANCE LOG FORM N

**SYSTEM:** Ice House Main System

DATE	DESCRIPTION OF SERVICE	ESTIMATED LBS LOST	TECHNICIAN
09/10/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	DD/WC
09/11/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/WC
09/12/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	DD/WC
09/13/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/WC
09/14/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/WC
09/15/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/WC
09/16/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/WC
09/17/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/WC
09/18/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	DD/WC
09/19/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	DD/CW
09/20/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	DD/CW
09/21/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/WC
09/22/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	DD/WC
09/23/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	DD/CW
09/24/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	DD/CW
09/25/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	DD/CW



# FREON® SYSTEM MAINTENANCE LOG FORM N

**SYSTEM:** Ice House Main System

DATE	DESCRIPTION OF SERVICE	ESTIMATED LBS LOST	TECHNICIAN
09/26/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	DD/CW
09/27/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	DD/CW
09/28/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	DD/CW
09/29/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/CW
09/30/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	DD/CW
10/01/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	DD/CW
01/02/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/WC
10/03/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/CW
10/04/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	DD/CW
10/05/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	DD/CW
10/06/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	DD/WC
10/07/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/CW
10/08/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/CW
10/09/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	DD/CW
10/10/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	DD/CW
10/11/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	DD/CW



## FREON® SYSTEM MAINTENANCE LOG FORM N

**SYSTEM:** Ice House Main System

DATE	DESCRIPTION OF SERVICE	ESTIMATED LBS LOST	TECHNICIAN
10/12/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/CW
10/13/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/WC
10/14/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/WC
10/15/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/CW
10/16/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	DD/CW
10/17/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	DD/CW
10/18/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	DD/WC
10/19/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	PW/CW
10/20/2017	Day shift: leak checks marked off as performed. Night shift: leak checks marked off as performed.	0	DD/WC
10/21/2017	Day shift: leak checks marked off as performed. Discovered a small shaft leak on the screw compressor. It happens only infrequently. Night shift: leak checks marked off as performed. <b>Form I: (#11) created for shaft seal leak on screw compressor. Will monitor and order parts for installation at earliest opportunity.</b>	1	PW/WDC
10/22/2017	Day shift: leak checks marked off as performed. No shaft seal leak on screw compressor. Night shift: leak checks marked off as performed.	0	PW/CW
10/23/2017	Day shift: leak checks marked off as performed. No shaft seal leak on the screw compressor. Night shift: leak checks marked off as performed.	0	PW/WC
10/24/2017	Day shift: leak checks marked off as performed. Small leak on shaft seal on screw compressor from time to time, will continue to monitor. <b>Night shift: leak checks marked off as performed.</b> <b>Form I: (#11) was created on 10/21/2017 parts are on order.</b>	1	DD/CW
10/25/2017	Day shift: leak checks marked off as performed. No shaft seal leak on screw compressor. Night shift: leak checks marked off as performed.	0	DD/CW
10/26/2017	Day shift: leak checks marked off as performed. No shaft seal leak on screw compressor. Night shift: leak checks marked off as performed.	0	DD/CW



# FREON® SYSTEM MAINTENANCE LOG FORM N

**SYSTEM:** Ice House Main System

DATE	DESCRIPTION OF SERVICE	ESTIMATED LBS LOST	TECHNICIAN
10/27/2017	Day shift: leak checks marked off as performed. No shaft seal leak on screw compressor. Night shift: leak checks marked off as performed.	0	PW/CW
10/28/2017	Day shift: leak checks marked off as performed. Small leak on shaft seal on screw compressor from time to time, will continue to monitor. Night shift: leak checks marked off as performed. Small leak on shaft seal of screw conveyor <b>Form I: (#11) was created on 10/21/2017 parts are on order. Now monitoring on both shifts.</b>	1	DD/CW
10/29/2017	Day shift: leak checks marked off as performed. No leak found on shaft seal of screw compressor. Night shift: leak checks marked off as performed. Small leak on shaft seal of screw compressor. <b>Form I: (#11) was created on 10/21/2017 parts are on order.</b>	1	PW/CW
10/30/2017	Day shift: leak checks marked off as performed. No shaft seal leak on screw compressor. Night shift: leak checks marked off as performed. No leak found on shaft seal of screw compressor	0	DD/CW
10/31/2017	Day shift: leak checks marked off as performed. Small leak on shaft seal on screw compressor from time to time, will continue to monitor. Night shift: leak checks marked off as performed. Small leak on shaft seal of screw conveyor <b>Form I: (#11) was created on 10/21/2017 parts are on order.</b>	1	PW/CW
11/01/2017	Day shift: leak checks marked off as performed. No leak on screw compressor. Night shift: leak checks marked off as performed. Small leak on the shaft seal on screw compressor.	1	PW/CW
11/02/2017	Day shift: leak checks marked off as performed. No leak on screw compressor. Night shift: leak checks marked off as performed. Small leak on the shaft seal on screw compressor.	1	DD/CW
11/03/2017	Day shift: leak checks marked off as performed. Small leak on screw compressor shaft seal. Keeping an eye on it. <b>Form I: (#11) created for leak.</b> Parts are ordered and will repair when time allows. Night shift: leak checks marked off as performed. Small leak on shaft seal of screw compressor.	1	DD/CW
11/04/2017	Day shift: leak checks marked off as performed. No leak found on shaft seal of screw compressor. Night shift: leak checks marked off as performed. Small leak on shaft seal of screw compressor.	1	PW/CW
11/05/2017	Day shift: leak checks marked off as performed. No leak in shaft seal. Night shift: leak checks marked off as performed. No leak on shaft seal.	0	DD/CW
11/06/2017	Day shift: leak checks marked off as performed. No leak in shaft seal. Night shift: leak checks marked off as performed. No leak on shaft seal.	0	PW/WC
11/07/2017	Day shift: leak checks marked off as performed. No leak found on shaft seal of screw compressor. Night shift: leak checks marked off as performed. Small leak on shaft seal of screw compressor.	1	DD/CW





## FREON® SYSTEM MAINTENANCE LOG FORM N

**SYSTEM:** Ice House Main System

DATE	DESCRIPTION OF SERVICE	ESTIMATED LBS LOST	TECHNICIAN
11/08/2017	Day shift: leak checks marked off as performed. Small leak on screw compressor shaft seal. Keeping an eye on it. <b>Form I: (#11) created for leak.</b> Parts are ordered and will repair when time allows. Night shift: leak checks marked off as performed. Small leak on shaft seal of screw compressor.	1	DD/CW
11/09/2017	Day shift: leak checks marked off as performed. No leak on screw compressor shaft seal. No night shift.	0	DD
11/10/2017	Day shift: leak checks marked off as performed. No leak on screw compressor shaft seal. No night shift.	0	DD
11/11/2017	Day shift: leak checks marked off as performed. No leak on screw compressor shaft seal. Night shift leak checks marked off as performed. Small leak on shaft seal of screw compressor.	1	DD/CW
11/12/2017	Day shift: leak checks marked off as performed. Small leak on shaft seal of screw compressor. No night shift.	1	PW
11/13/2017	Day shift: leak checks marked off as performed. Small leak on shaft seal of screw compressor. No night shift.	1	DD
11/14/2017	Day shift: leak checks marked off as performed. No leak from shaft seal on screw compressor. No night shift.	0	DD
11/15/2017	Day shift: leak checks marked off as performed. No leak from shaft seal on screw compressor. No night shift.	0	PW
11/16/2017	Day shift: leak checks marked off as performed. No leak from shaft seal on screw compressor. No night shift.	0	WC
11/17/2017	Day shift: leak checks marked off as performed. No leak from shaft seal on screw compressor. No night shift.	0	WC
11/18/2017	Day shift: leak checks marked off as performed. No leak from shaft seal on screw compressor. No night shift.	0	DD
11/19/2017	Day shift: leak checks marked off as performed. No leak from shaft seal on screw compressor. No night shift.	0	WC
11/20/2017	Day shift: leak checks marked off as performed. No leak from shaft seal on screw compressor. No night shift.	0	WC
11/21/2017	Day shift: leak checks marked off as performed. No leak from shaft seal on screw compressor. No night shift.	0	WC
11/22/2017	Day shift: leak checks marked off as performed. Small leak from shaft seal on screw compressor. No night shift.	1	CW



# FREON® SYSTEM MAINTENANCE LOG FORM N

**SYSTEM:** Ice House Main System

DATE	DESCRIPTION OF SERVICE	ESTIMATED LBS LOST	TECHNICIAN
11/23/2017	Day shift: leak checks marked off as performed. No leak from shaft seal on screw compressor. No night shift.	0	DD
11/24/2017	Day shift: leak checks marked off as performed. No leak from shaft seal on screw compressor. No night shift.	0	WC
11/25/2017	Day shift: leak checks marked off as performed. No leak from shaft seal on screw compressor. No night shift.	0	WC
11/26/2017	Day shift: leak checks marked off as performed. No leak from shaft seal on screw compressor. No night shift.	0	WC
11/27/2017	Day shift: leak checks marked off as performed. No leak from shaft seal on screw compressor. No night shift.	0	WC
11/28/2017	Day shift: leak checks marked off as performed. No leak from shaft seal on screw compressor. No night shift.	0	DD
11/29/2017	Day shift: leak checks marked off as performed. No leak from shaft seal on screw compressor. No night shift.	0	WC
11/30/2017	Day shift: leak checks marked off as performed. No leak from shaft seal on screw compressor. No night shift.	0	WC
12/01/2017	Day shift: leak checks marked off as performed. No leak from shaft seal on screw compressor. No night shift.	0	WC
12/02/2017	Day shift: leak checks marked off as performed. No leaks from the shaft seal on the screw compressor. Night shift: leak checks marked off as performed.	0	PW/PW
12/03/2017	Day shift: leak checks marked off as performed. No leak from shaft seal on screw compressor. No night shift.	0	PW
12/04/2017	Day shift: leak checks marked off as performed. No leak from shaft seal on screw compressor. No night shift.	0	DD
12/05/2017	Day shift: leak checks marked off as performed. No leak from shaft seal on screw compressor. No night shift.	0	DD
12/06/2017	Day shift: leak checks marked off as performed. No leak from shaft seal on screw compressor. No night shift.	0	WC
12/07/2017	Day shift: leak checks marked off as performed. No leak from shaft seal on screw compressor. No night shift.	0	DD
12/08/2017	Day shift: leak checks marked off as performed. No leak from shaft seal on screw compressor. No night shift.	0	DD



## FREON® SYSTEM MAINTENANCE LOG FORM N

**SYSTEM:** Ice House Main System

DATE	DESCRIPTION OF SERVICE	ESTIMATED LBS LOST	TECHNICIAN
12/09/2017	Day shift: leak checks marked off as performed. No leak from shaft seal on screw compressor. No night shift.	0	WC
12/10/2017	Day shift: leak checks marked off as performed. No leak from shaft seal on screw compressor. No night shift.	0	WC
12/11/2017	Day shift: leak checks marked off as performed. No leak from shaft seal on screw compressor. Dylan removed Make-up tank #2 chipped and corasealed it and put the drain back on. (DD). Wayne Christensen & Chris Wirkkala removed the condenser fan and moter and replaced the bearings. No night shift.	0	WC
12/12/2017	Day shift: leak checks marked off as performed. Small leak from shaft seal on screw compressor. (DD) Dylan: took apart Make-up tank #4. Chipped and corasealed the area, then painted and put back together. Chris: Chipped and paint and corasealed area and then painted around drum #2. Wayne: Replaced motor bearing on condenser motor & remounted motor to the condenser. No night shift.	1	DD
12/13/2017	Day shift; leak checks marked off as performed. No leak from shaft seal on the screw compressor. Wayne/Chris/Dylan put the screw condenser back together.	0	DD
12/14/2017	Day shift: leak checks marked off as performed. No leak from shaft seal on screw compressor. Wayne/Dylan: chipped and painted base area around drum #1 & #2. No night shift.	0	WC
12/15/2017	Day shift: leak checks marked off as performed. No leak from shaft seal on screw compressor. Wayne/Dylan: chipped and painted between 3 & 4. No night shift.	0	WC
12/16/2017	Day shift: leak checks marked off as performed. Small leak from shaft seal on screw compressor, (CW). Chris: Did the leak checks and finished some painting around Drum #2. No night shift.	1	CW
12/17/2017	Day shift: leak checks marked off as performed. Small leak from shaft seal on screw compressor. Chris did checks. No night shift. <b>Form I: (#11) still open parts are on order and will be installed in March shutdown. Small leak is diminimus, and only appears occasionally. We will monitor and changed in March.</b>	1	CW
12/18/2017	Day shift: leak checks marked off as performed. No leak from shaft seal on screw compressor. (WC). Wayne and Chris chipped and painted. No night shift.	0	WC
12/19/2017	Day shift: leak checks marked off as performed. No leak from shaft seal on screw compressor. Wayne/Dylan: Repaired drip shields on #2 & #4 and replaced drip tray #4. No night shift.	0	WC
12/20/2017	Day shift: leak checks marked off as performed. No leak from shaft seal on screw compressor. Dylan greased everything. No night shift.	0	WC



# FREON® SYSTEM MAINTENANCE LOG FORM N

**SYSTEM:** Ice House Main System

DATE	DESCRIPTION OF SERVICE	ESTIMATED LBS LOST	TECHNICIAN
12/21/2017	Day shift: leak checks marked off as performed. No leak from shaft seal on screw compressor. No night shift.	0	DD
12/22/2017	Day shift: leak checks marked off as performed. No leak from shaft seal on screw compressor. No night shift.	0	CW
12/23/2017	Day shift: leak checks marked off as performed. No leak from shaft seal on screw compressor. Dylan painted and chipped around the Ice House. No night shift.	0	DD
12/24/2017	Day shift: leak checks marked off as performed. No leak from shaft seal on screw compressor. No night shift.	0	WC
12/25/2017	Day shift: leak checks marked off as performed. No leak from shaft seal on screw compressor. Dylan painted. No night shift.	0	WC
12/26/2017	Day shift: leak checks marked off as performed. No leak from shaft seal on screw compressor. No night shift.	0	DD
12/27/2017	Day shift: leak checks marked off as performed. No leak from shaft seal on screw compressor. No night shift.	0	DD
12/28/2017	Day shift: leak checks marked off as performed. No leak from shaft seal on screw compressor. No night shift.	0	CW
12/29/2017	Day shift: leak checks marked off as performed. No leak from shaft seal on screw compressor. Dylan/Chris/Wayne: replaced evaporator pump. No night shift.	0	WC
12/30/2017	Day shift: leak checks marked off as performed. No leak from shaft seal on screw compressor. Chris wiped down machines and cleaned up. Wayne/Dylan: removed evaporator motor. No night shift.	0	CW
12/31/2017	Day shift: leak checks marked off as performed. No leak from shaft seal on screw compressor. Dylan: painted between drums #3 & #4, 2nd coat. No night shift.	0	WC
01/01/2018	Day shift: leak checks marked off as performed. No leak from shaft seal on screw compressor. No night shift.	0	WC
01/02/2018	Day shift: leak checks marked off as performed. No leak from shaft seal on screw compressor. Wayne: wrapped up evaporator #6 for defrost. No night shift.	0	WC
01/03/2018	Day shift: leak checks marked off as performed. No leak on shaft seal on screw compressor. Wayne/Chris/Dylan changed heater coil in bin B.	0	WC
01/04/2018	Day shift: leak checks marked off as performed. No leak from shaft seal on screw compressor. No night shift.	0	WC
01/05/2018	Day shift: leak checks marked off as performed. Small leak on screw shaft seal, (WC) Wayne/Chris/Dylan tighten the chains in bin A.	0	WC



## FREON® SYSTEM MAINTENANCE LOG FORM N

**SYSTEM:** Ice House Main System

DATE	DESCRIPTION OF SERVICE	ESTIMATED LBS LOST	TECHNICIAN
01/06/2018	Day shift: leak checks marked off as performed. Small leak from shaft seal on screw compressor. Chris did checks. No night shift. <b>Form I: (#11) still open parts are on order and will be installed in March shutdown. Small leak is diminimus, and only appears occasionally. We will monitor and changed in March.</b>	1	WC
01/07/2018	Day shift: leak checks marked off as performed. Small leak on screw shaft seal. No night shift.	1	PW
01/08/2018	Day shift: leak checks marked off as performed. Small leak on screw shaft seal. Locked out all controls on air cooled condenser. Replaced bearings on fan shaft #3, tor apart themotor for fan #3, waiting on bearings to finish. No night shift.	1	DD
01/09/2018	Day shift: leak checks marked off as performed. Small leak on screw shaft seal. Power locked out. Removed motor on #4 ari cooled condenser. Power locked out on discharge auger. Checked the carrier bearings. Painted upstairs. Painted carrier #4. Locked out the discharge auger and replaced the carrier bearings on the discharge auger for bin A & B and put back into service. No night shift.	1	WC
01/10/2018	Day shift: leak checks marked off as performed. Rebuilt the air cooled condenser fan motors #3 & #4, finished and put back into service. No night shift.	0	WC
01/11/2018	Day shift: leak checks marked off as performed. Small leak on screw shaft seal. Locked out compressors #4 & #4. Wayne/Dylan/Chris scrapped and painted tanks 1 & 2, 2 & 4 and painted yellow on compressors 3 & 4. No night shift.	1	WC
01/12/2018	Day shift: leak checks marked off as performed. Small leak on screw shaft seal. Painted receiver #1 & #2. No night shift.	1	CW
01/13/2018	Day shift: leak checks marked off as performed. No leak on the screw compressor. No night shift.	0	PW
01/14/2018	Day shift: leak checks marked off as performed. No leak on the screw compressor. No night shift.	0	WC
01/15/2018	Day shift: leak checks marked off as performed. Locked out all the controls for the B-side, then repaired wires on the motor for the twin screw compressor on B-side, put back into service. Locked out all controls and changed bearings on the fans and motors on air cooled condenser #1 & #2. No night shift.	0	PW
01/16/2018	Day shift: leak checks marked off as performed. No leak on the screw compressor. Wayne/Dylan/Chris: touch up paint on the receivers. No night shift.	0	WC
01/17/2018	Day shift: leak checks marked off as performed. Put the bearings for fan #2 & #1 back in, tested them and put them back into service. Changed motors out and replaced bearings on all ice drums, locked out all controls.	0	DD



## FREON® SYSTEM MAINTENANCE LOG FORM N

**SYSTEM:** Ice House Main System

DATE	DESCRIPTION OF SERVICE	ESTIMATED LBS LOST	TECHNICIAN
01/18/2018	Day shift: leak checks marked off as performed. Rebuilt the backup motor for the ice drum. No night shift.	0	DD
01/19/2018	Day shift: leak checks marked off as performed. Stripping down paint on the screw compressor and re-painting it. No night shift.	0	DD
01/20/2018	Day shift: leak checks marked off as performed. No night shift.	0	DD
01/21/2018	Day shift: leak checks marked off as performed. No leak on the screw compressor shaft seal. No night shift.	0	WC
01/22/2018	Day shift: leak checks marked off as performed. No leak on the screw compressor shaft seal. Painted on screw compressor. No night shift.	0	CW
01/23/2018	Day shift: leak checks marked off as performed. No leak on the screw compressor. Painted. No night shift.	0	WC
01/24/2018	Day shift: leak checks marked off as performed. No leak on the screw compressor shaft seal. No night shift.	0	WC
01/25/2018	Day shift: leak checks marked off as performed. No leak on the screw compressor shaft seal. No night shift.	0	CW
01/26/2018	Day shift: leak checks marked off as performed. No leak on the screw compressor shaft seal. Night shift: leak checks marked off as performed.	0	PW/WC
01/27/2018	Day shift: leak checks marked off as performed. No leak on the screw compressor shaft seal. No night shift.	0	PW
01/28/2018	Day shift: leak checks marked off as performed. No leak on the screw compressor shaft seal. No night shift.	0	WC
01/29/2018	Day shift: leak checks marked off as performed. No leak on the screw compressor shaft seal. Locked out the liquid condenser water pump and changed out the motor. No night shift.	0	WC
01/30/2018	Day shift: leak checks marked off as performed. Small leak on the screw shaft seal, <b>(Form I #11 already open, will repair in March)</b> . Helped Roglin's secure piling to the dock. No night shift.	1	CW
01/31/2018	Day shift; leak checks marked off as performed. Very small leak on the screw shaft seal. Painted numbers on the power boxes.	1	CW
02/01/2018	Day shift: leak checks marked off as performed. No leak on the screw shaft seal. Locked out and changed the bearings on the fresh water pump. No night shift.	0	WC
02/02/2018	Day shift: leak checks marked off as performed. Small leak on the screw shaft seal. No night shift.	1	PW
02/03/2018	Day shift: leak checks marked off as performed. No leak on screw compressor shaft seal. No night shift.	0	WC



## FREON® SYSTEM MAINTENANCE LOG FORM N

**SYSTEM:** Ice House Main System

DATE	DESCRIPTION OF SERVICE	ESTIMATED LBS LOST	TECHNICIAN
02/04/2018	Day shift: leak checks marked off as performed. No night shift.	0	PW
02/05/2018	Day shift: leak checks marked off as performed. No night shift.	0	CW
02/06/2018	Day shift: leak checks marked off as performed. Small leak on the screw shaft seal. No night shift.	1	CW
02/07/2018	Day shift: leak checks marked off as performed. Built a cabinet downstairs and cleaned off the shelves. No night shift.	0	CW
02/08/2018	Day shift: leak checks marked off as performed. Small leak on the screw shaft seal. No night shift.	1	CW
02/09/2018	Day shift: leak checks marked off as performed. No leak on the screw compressor shaft seal. No night shift.	0	WC
02/10/2018	Day shift: leak checks marked off as performed. Small leak on the screw shaft seal. No night shift.	1	CW
02/11/2018	Day shift: leak checks marked off as performed. Small leak on the screw shaft seal. No night shift.	1	WC
02/12/2018	Day shift: leak checks marked off as performed. Small leak on the screw shaft seal. No night shift.	1	WC
02/13/2018	Day shift: leak checks marked off as performed. Small leak on the screw shaft seal. No night shift.	1	WC
02/14/2018	Day shift: leak checks marked off as performed. Small leak on the screw shaft seal. No night shift.	1	CW
02/15/2018	Day shift: leak checks marked off as performed. Small leak on the screw shaft seal. No night shift.	1	WC
02/16/2018	Day shift: leak checks marked off as performed. Small leak on the screw shaft seal. No night shift.	1	WC
02/17/2018	Day shift: leak checks marked off as performed. Small leak on the screw shaft seal. No night shift.	1	WC
02/18/2018	Day shift: leak checks marked off as performed. Small leak on the screw shaft seal. No night shift.	1	WC
02/19/2018	Day shift: leak checks marked off as performed. Small leak on the screw shaft seal. No night shift.	1	WC
02/20/2018	Day shift: leak checks marked off as performed. Small leak on the screw shaft seal. No night shift.	1	WC
02/21/2018	Day shift: leak checks marked off as performed. No leak on the screw shaft seal. No night shift.	0	WC



## FREON® SYSTEM MAINTENANCE LOG FORM N

**SYSTEM:** Ice House Main System

DATE	DESCRIPTION OF SERVICE	ESTIMATED LBS LOST	TECHNICIAN
02/22/2018	Day shift: leak checks marked off as performed. No leak on the screw shaft seal. No night shift.	0	WC
02/23/2018	Day shift: leak checks marked off as performed. No leak on the screw shaft seal. No night shift.	0	CW
02/24/2018	Day shift: leak checks marked off as performed. No leak on the screw shaft seal. No night shift.	0	WC
02/25/2018	Day shift: leak checks marked off as performed. No leak on the screw shaft seal. No night shift.	0	WC
02/26/2018	Day shift: leak checks marked off as performed. Small leak on the screw shaft seal. Wayne locked out and changed the fan motor on evaporator B. Test ran it for direction and put it back into service. No night shift.	1	WC
02/27/2018	Day shift: leak checks marked off as performed. Small leak on the screw shaft seal. No night shift.	1	WC
02/28/2018	Day shift: leak checks marked off as performed. Small leak on the screw shaft seal. No night shift.	1	WC
03/01/2018	Day shift: leak checks marked off as performed. No leak on the screw shaft seal. No night shift.	0	WC
03/02/2018	Day shift: leak checks marked off as performed. No leak on the screw shaft seal. No night shift.	0	WC
03/03/2018	Day shift: leak checks marked off as performed. Small leak on the screw shaft seal. No night shift.	1	WC
03/04/2018	Day shift: leak checks marked off as performed. Small leak on the screw shaft seal. No night shift.	1	WC
03/05/2018	Day shift: leak checks marked off as performed. No leak on the screw shaft seal. No night shift.	0	DD
03/06/2018	Day shift: leak checks marked off as performed. Locked out the evaporator fan, changed the fan motor and tested it and put it back into service. Pat Walker started pulling Freon (R-22) from the system into recovery bottles using compressor #3. Pulled the screw compressor down to 4"Hg. Only did 4"Hg on the screw compressor because of the shaft seal that has been leaking. We didn't want to pull air into the system. We will not be working weekends until further notice.	0	WC
03/07/2018	Day shift: leak checks marked off as performed. Continued to pull out freon.	0	WC
03/08/2018	Day shift: leak checks marked off as performed. Wayne/Chris: Changed the UHM pads for the rakes in bins A & B. Took old bearings out of the idle ends, waiting for bearings to come in. Pat Walker: Pulling freon from receiver #4 by using compressor #3. Pulled down to 15"Hg. Also pulled compressor #4 down to 15"Hg with compressor #3.	0	WC





## FREON® SYSTEM MAINTENANCE LOG FORM N

**SYSTEM:** Ice House Main System

DATE	DESCRIPTION OF SERVICE	ESTIMATED LBS LOST	TECHNICIAN
03/09/2018	Day shift: leak checks marked off as performed. Wayne/Chris: put bearkings for Bin A idle ends back together. Still waiting on the bearings for Bin B. Took the oil pump off of the screw compressor. Changed filters on the screw compressor. Pat: Using compressor #3, we pulled the liquid out of receiver #3, then switched to recovery pump and pulled the vapor out down to 15"Hg. We used the recovery pump to pull liquid and vapor out of compressor #3 to a 15"Hg vacuum. All freon is out of the system at this time. There will be no leak checks until freon is re-entered into the system.	0	WC
03/10/2018	Day shift: no leak checks performed. All freon has been removed. No work on the weekends until further notice.	0	PW/WC/DD/CW
03/11/2018	Day shift: no leak checks performed. All freon has been removed. No work on the weekends until further notice.	0	PW/WC/DD/CW
03/12/2018	Day shift: no leak checks performed. All freon has been removed. Cleaned the condenser fan and put the idle ends for Bin B back together with new bearings. Put the rakes back in.	0	PW/WC/DD/CW
03/13/2018	Day shift: no leak checks performed. All freon has been removed. Wayne/Chris: removed motor on evaporator fan B. Drilled out the holes that were stripped on the idle ends for Bin A then re-tapped them. Changed the dryer filters.	0	PW/WC/DD/CW
03/14/2018	Day shift: no leak checks performed. All freon has been removed. Wayne/Chris: Cleaned all the gearboxes and added new fluids to each gearbox. Changed the Carrier bearings for A & B twin screw augers. Removed and replaced the leaking shaft seal on the screw compressor. We will leak check after we change the oil. <b>Form I: (#11) created for this leak. Follow up test will be performed after startup. Once follow up test is performed. We will update this Form I (#11) and closed out 2017 workbook.</b>	0	PW/WC/DD/CW
03/15/2018	Day shift: no leak checks performed. All freon has been removed. Wayne/Chris/Dylan: Adjusted and checked the cutters in all drums. Cleaned the King nipples and hoses for Drums 1 & 2. All drip trays were cleaned and broken ones replaced.	0	PW/WC/DD/CW
03/16/2018	Day shift: no leak checks performed. All freon has been removed. Dylan/Chris/Wayne: Rodded out the oil coolers, removed make-tanks, corageated behind make-tanks, adjusted the rake chains for A & B.	0	PW/WC/DD/CW



# APPENDIX 2

## Purchase Order for R- 22



Airgas Refrigerants, Inc.  
2530 Sever Road Ste 300  
Lawrenceville, GA 30043

05/01/17

# ORIGINAL INVOICE

X

INVOICE DATE	CUST. NO.	INVOICE NO.	DUE DATE	(b) (4)
05/03/17	1DSMX	133365916	DUE NOW	

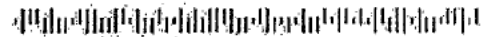
We accept



SOLD BY AIRGAS REFRIGERANTS  
38-18 33RD STREET  
LONG ISLAND CITY NY 11101  
(718) 392-8002

*Trans date 4/28  
posted to  
cc 5/1*

PLEASE MAKE CHECKS PAYABLE AND REMIT TO:



Airgas Refrigerants, Inc.  
PO Box 962182  
Dallas, TX 75395-2182

SOLD TO (b) (4)

\*W\*

001DSMX0013336591600026450003

TO ENSURE PROPER CREDIT, PLEASE RETURN THE UPPER PORTION WITH YOUR REMITTANCE. FOR QUESTIONS ON YOUR ACCOUNT PLEASE CALL: 800-295-2225

ORDER NUMBER	INVOICE NUMBER	ACCOUNT NUMBER	INVOICE DATE	ACCOUNT NAME
362665-00	133365916	1DSMX	05/03/17	(b) (4)
CUSTOMER ORDER NUMBER	EBRN	SLS	TERR	SHIP VIA
CC	202	602	210	COMMON CARRI
DELIVERY NUMBER	ORDER DATE	PART NUMBER	QUANTITY	DESCRIPTION
				***** This is an internet order *****
				Customer Notes: RISOrder: 1188790   BOL: 5571261   Shipped: 04/28/2017   FEDEX 4252117855
				** LOCATION: TRM **
3626650503		REFR22RHTN	1	R22 CHLORODIFLUOROMETHAN (b) (4)
			1	(b) (4)
			1	R22 CHLORODIFLUOROMETHANE (b) (4)
3626650			1	(b) (4)
				TOTAL CYLINDERS SHIPPED: (b) (4)
				TAX CD: 480271718 TAX DESCRE: WA/GRAYS H EXMPT CD: 0 EXMPT/CERT:



an Air Liquide company

Airgas Refrigerants, Inc.  
2530 Sever Road Ste 300  
Lawrenceville, GA 30043

(b) (4)

TAXABLE AMOUNT  
\$0.00

AMOUNT  
THIS INVOICE

FOR WIRE TRANS

ACT. NAME AIRGAS REFRIGERANTS  
ACT. NO. 2000013086654  
Wells Fargo Bank - ABA NO. 121000248  
REF. 133365916/1DSMX

For change of address  
email to: air-accounts.receivable@airgas.com  
or call 800-473-3769

ORIGINAL INVOICE

# APPENDIX 3

## Refrigerant Compliance Management Plan for Icehouse

# Refrigerant Compliance Management Plan (RCMP)



**Facilities covered by this plan:**

## **Ice House**

1804 Nyhus St N  
Westport, WA 98595

Prepared by:



18551 Aurora Avenue N, Suite 200  
Seattle, Washington 98133  
(206) 331-4130

**Revision Date: 04/26/2017**

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## TABLE OF CONTENTS

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HOW TO USE THIS MANUAL .....	5
<b>Introduction .....</b>	<b>7</b>
CFCs and other Ozone Depleting Substances .....	8
Phase-Out of HCFC Production and Importation.....	9
Impact of CFCs, HCFCs, HFCs, and Halons on the Ozone Layer .....	10
The Clean Air Act in Relation to Ozone Depleting Substances .....	10
How is the Clean Air Act Implemented? .....	11
<b>Refrigerant Policies .....</b>	<b>12</b>
Ocean Companies Refrigerant Policies .....	13
<b>Compliance Responsibilities .....</b>	<b>14</b>
Management Responsibilities.....	15
Contact Information.....	19
Training .....	19
Audits .....	20
<b>Procedures .....</b>	<b>21</b>
Overview .....	22
Standard Operating Procedures .....	23
Covered Systems.....	23
Current Charge Determination Procedures (per the Consent Decree) .....	24
Adding a New Appliance (per the Consent Decree) .....	24
Adding/Removing Refrigerant Procedures .....	24
Refrigerant Tracking Procedures .....	25
Leak Rate Calculation Procedures.....	25
Leak Repair Procedures .....	26
Refrigerant Recovery Procedures .....	27
Contractor Procedures.....	28
Daily Leak Checking Procedures .....	29
Leak Detector Use Procedures.....	29
Maintenance, Service, and Repair Procedures .....	30
Disposal Procedures.....	31
Recordkeeping Procedures (per Consent Decree).....	31
RCMP Update Procedures (per the Consent Decree).....	31
EPA Reporting Procedures (per the Consent Decree) .....	31
Consent Decree Violation Reporting Procedures .....	33
EPCRA Reporting Procedures.....	33
<b>Leak Rates &amp; Exceedance Procedures .....</b>	<b>35</b>
Refrigerant Release Reduction Program (per the Consent Decree) .....	36
Leak Rate/Trigger Rate.....	37
<b>Third Party Verifiers (TPV) .....</b>	<b>41</b>
Overview .....	42
Hiring.....	42
Third Party Verifier Duties .....	42
Replacement Procedure .....	42



Annual Reports .....	42
Ocean Companies Response to TPV Report .....	43
<b>Technicians.....</b>	<b>44</b>
Certified Technicians.....	45
Contractors .....	46
<b>Refrigerants.....</b>	<b>47</b>
Health and Safety Issues .....	48
Purchasing, Selling, Distribution .....	48
Venting and Releases .....	48
Recovery, Reclaiming, Recycling (“Disposal”).....	49
Recovery and Recycling Equipment.....	50
Recovery Procedures and Requirements.....	51
Mixed Refrigerants.....	54
Storage of Refrigerants .....	54
<b>Lubricants.....</b>	<b>56</b>
Use of Lubricants in Refrigeration Systems .....	57
Lubricants – Disposal .....	57
<b>Regulatory Requirements Glossary .....</b>	<b>58</b>
Glossary.....	59

## TABLE OF FIGURES

---

Figure 1 DOT Shipping Label .....	52
Figure 2 DOT Hazardous Material Label .....	52
Figure 3 Refrigerant Usage Tag (optional) .....	53

## HOW TO USE THIS MANUAL

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- Read this manual all the way through at least one time.
- Ocean Companies signed a **Consent Decree** with the Environmental Protection Agency (EPA) which creates additional enforceable requirements for the Ocean Companies Facilities. This manual outlines the Consent Decree requirements relevant to the operations described in the manual, and will draw specific attention to those requirements by marking them as required by the Consent Decree (example: “per the Consent Decree”). Use the following key points when the Consent Decree is referenced:
  - In the event of a conflict between the Consent Decree and this manual, or a conflict between the regulations and this manual, the obligations in the Consent Decree and the regulations govern. This manual is designed to assist employees with meeting regulatory and Consent Decree obligations; it does not replace or change those obligations.
  - The Consent Decree uses “Refrigerant Years” for recordkeeping, reporting, and other requirements. The Refrigerant Year begins on March 15<sup>th</sup> of each year. The following table may be used as a reference:

Refrigerant Year (RY)	Dates
2016	3/15/2016-3/14/2017
2017	3/15/2017-3/14/2018
2018	3/15/2018-3/14/2019
2019	3/15/2019-3/14/2020
2020	3/15/2020-3/14/2021

- If Ocean Companies maintains satisfactory compliance with the Decree for five full years from the effective date, Ocean Companies may request to terminate the Decree. Until the Decree is terminated, all requirements under the Decree are mandatory.
- A separate Microsoft Excel forms workbook will be maintained for each Facility for each Refrigerant Year. This will provide an opportunity to reconcile Freon records on an annual basis and will provide for an organized response when annual reporting under the Consent Decree is required and should additional records be requested by regulatory agencies such as the EPA.
- When filling out forms, refer to the following for additional help:
  - This **manual (RCMP)**.
  - The **safety and compliance manager**.
  - The **Consent Decree**.
  - The **glossary**: The glossary provides definitions for many of the terms used in this manual and on the forms. Terms defined in the glossary are capitalized in this manual. In a number of cases, words that may have broader meanings in the “every day” sense often have narrower meanings as defined by EPA for regulatory purposes.

The following **two key terms** from the glossary are noted here to provide clarity to users of this manual:

1. **Refrigeration Appliance or Appliance** (per the Consent Decree) means all Industrial Process Refrigeration Appliances, as defined in 40 C.F.R. § 82.152, that are located in Ocean Companies’ Facilities and that “normally contain” (as defined in 40 C.F.R. §§

82.152) more than 50 pounds of Refrigerant. Large, custom-built assemblages of refrigeration equipment at a single Facility that share a single Refrigerant charge and constitute a single closed-loop refrigeration System, are a single Refrigeration Appliance for the purpose of the Consent Decree. The words **System** and **Appliance** are used interchangeably in this manual.

2. **Refrigerants** are used for heat transfer purposes and to provide a cooling effect. They include any substances consisting in part or whole of Class I or Class II Ozone-Depleting Substances (such as CFCs and HCFCs). **This manual uses the terms *Freon*<sup>®</sup> and *Refrigerant* interchangeably.** Other Refrigerants, such as ammonia and CO<sub>2</sub>, are not regulated in the same way and are not covered by this plan.

# Introduction

## CFCs and other Ozone Depleting Substances

---

Chlorofluorocarbons (CFCs) are gas or liquid compounds that contain atoms of chlorine, fluorine, and carbon. CFCs are used as Refrigerants, solvents, foam blowing agents, and in other smaller applications. For over 50 years, CFCs were thought of as miracle substances: they are stable, nonflammable, low in toxicity, and inexpensive to produce.

Beginning in the 1970s, researchers found that the chlorine in CFCs has a significantly damaging effect on the earth's ozone layer. Most chlorine from other sources, such as swimming pools, industrial plants, sea salt, and volcanoes, does not reach the Stratosphere, where the ozone layer is located. This is because chlorine compounds from these sources readily combine with water; repeated measurements show that the chlorine from these sources "rains out" of the earth's Troposphere very quickly. In contrast, CFCs are very stable. They do not dissolve in rain, and there are no other natural processes that remove CFCs from the lower atmosphere. Over time, winds drive these stable CFCs into the Stratosphere. Only exposure to the strong UV radiation in the Stratosphere can break down CFCs. When this happens, the CFC molecules release atomic chlorine. Since one chlorine atom is capable of destroying over 100,000 ozone molecules, the net effect is that the ozone in the ozone layer is destroyed faster than it is naturally created. Because of the damage they inflict on the ozone layer, CFC compounds (and others like them) are called Ozone-Depleting Substances (ODS).

Following are some additional examples of Ozone-Depleting Substances:

- **Hydrochlorofluorocarbons (HCFCs)** are a subset of CFCs. HCFCs are used primarily as Refrigerants and also deplete the ozone layer, though much less quickly than CFCs. As a result, HCFCs have been used as transitional Substitutes for CFCs as the United States moves toward eliminating use of Ozone-Depleting Substances.
- **Halons** are compounds that contain bromine, and are used primarily as fire extinguishing agents. Halons release ozone-destroying bromine, which is many times more effective at destroying ozone than chlorine.

The initial concern generated about the ozone layer in the 1970s led to a ban on the use of CFCs in aerosol propellants in several countries, including the U.S.; however, production of CFCs and other Ozone-Depleting Substances continued rapidly as new uses for CFCs were discovered. Subsequent measurements of the ozone layer showed worse than expected additional damage, and concern about the ozone layer eventually led the United States and other countries to enter into international agreements designed to phase out use of ODS. The most recent of these agreements is the Montreal Protocol on Substances that Deplete the Ozone Layer, signed in 1987. The parties to the Montreal Protocol agreed to completely end production of CFCs and Halons by the beginning of 1996 in developed countries, and to continue to phase out HCFCs and other ODS.

In response to the requirements of the Montreal Protocol, EPA divided ODS into classes:

- **Class I Substances** are those substances that exceed a certain threshold with regard to ozone-depletion potential, including CFCs and Halons.
- **Class II Substances** are those substances that are below the Class I Substance threshold for ozone-depleting potential. Currently, all HCFCs are Class II Substances.

As of January 1, 2010, the production of CFCs is no longer permitted under the Montreal Protocol.

"Freon®," a name commonly associated with coolants and Refrigerants, is a registered trademark owned by E. I. DuPont de Nemours and Company. The name "Freon®" is used for products containing CFCs, HCFCs, HFCs, and related compounds (other commercial names used for Refrigerants from around the world are Algofrene, Arcton, Asahiflon, Daiflon, Eskimo, FCC, Flon, Flugene, Forane, Fridohna, Frigen, Frigedohn, Genetron, Isceon, Isotron, Kaiser, Kaltron, Khladon, Ledon, Racon, and Ucon).

Over time, the term Freon® has come to be used generically to describe any CFC, HCFC, and HFC Refrigerant. In this manual, "Freon®" and "Refrigerant" are used interchangeably to refer to all ozone-depleting Refrigerants and their Substitutes.

The chemical names of the various coolants and Refrigerants are identified by a numbering System, using varying prefixes such as R- (for Refrigerant), or CFC-, HCFC-, and HFC-, and the Refrigerant number. The table below illustrates the different numbers assigned to some chemical names of different Refrigerants:

REFRIGERANT NAMES				
CHEMICAL NAME	REFRIGERANT NO.	CFC, HCFC, HFC, HALON NO.	MOLECULAR FORMULA	CLASS NO.
Dichlorodifluoromethane	R-12	CFC-12	CCl <sub>2</sub> F <sub>2</sub>	I
Chlorodifluoromethane	R-22	HCFC-22	CHClF <sub>2</sub>	II
1,1,1,2-Tetrafluoroethane	R-134a	HFC-134a	CH <sub>2</sub> FCF <sub>3</sub>	NA
Fluorocarbon Blend	R-404A	HFC-404A	CHF <sub>2</sub> CF <sub>3</sub> /CH <sub>3</sub> CF <sub>3</sub> /CH <sub>2</sub> FCF <sub>3</sub>	NA
Fluorocarbon Blend	R-507A	HFC-507A	CHF <sub>2</sub> CF <sub>3</sub> /CH <sub>3</sub> CF <sub>3</sub>	NA

#### Phase-Out of HCFC Production and Importation

Although HCFCs have been used as transitional Substitutes for CFCs as the United States moves toward eliminating use of ODS, the United States is phasing out HCFC use by first limiting and then prohibiting the production or importation of HCFCs. The table below shows the phase-out schedule. In the meantime, the Clean Air Act and EPA regulations place many controls on the manufacture, purchase, use and Disposal of HCFCs.

PHASE-OUT OF HCFC PRODUCTION AND IMPORTATION	
Year to be Implemented	Implementation of HCFC Phase-out through Clean Air Act Regulations
2003	No production and no importing of HCFC-141B
2010	No production and no importing of HCFC-142B and HCFC-22 (R-22), except for use in equipment manufactured before 1/1/2010 (so no installation of NEW equipment that uses these Refrigerants)
2015	No production and no importing of any HCFCs, except for use as Refrigerants in equipment manufactured before 1/1/2020
2020	No production and no importing of HCFC-142B and HCFC-22 (R-22)
2030	No production and no importing of any HCFCs

### Impact of CFCs, HCFCs, HFCs, and Halons on the Ozone Layer

The following table shows the impact of some Refrigerants on the ozone layer.

- **Atmospheric Life** refers to the number of years the compound remains in the atmosphere.
- **Ozone Depleting Potential (ODP)** indicates the amount of degradation to the ozone layer a gas can cause. The higher the ODP, the more ozone is destroyed.
- **Global Warming Potential (GWP)** indicates how well a gas traps heat in the atmosphere. Many of these gases remain in the atmosphere for thousands of years. The higher the GWP, the more heat the specific gas can keep in the atmosphere, and the faster the earth's climate will change.

ENVIRONMENTAL DAMAGE POTENTIAL OF COMMON REFRIGERANTS					
Gas	Boiling Point (°F)	Ozone Depleting Potential (ODP)	Global Warming Potential (GWP)	Atmospheric life (years)	Substance type
R-12	-21.6	1.000	10890	100	CFC
Halon 1301	-72.0	16	7030	65	Halon
R-22	-41.4	0.055	1600	12	HCFC
R-134a*	-15.7	0	1300	13	HFC

\* Note that R-134a, which is an HFC, has an ozone-depleting potential of zero.

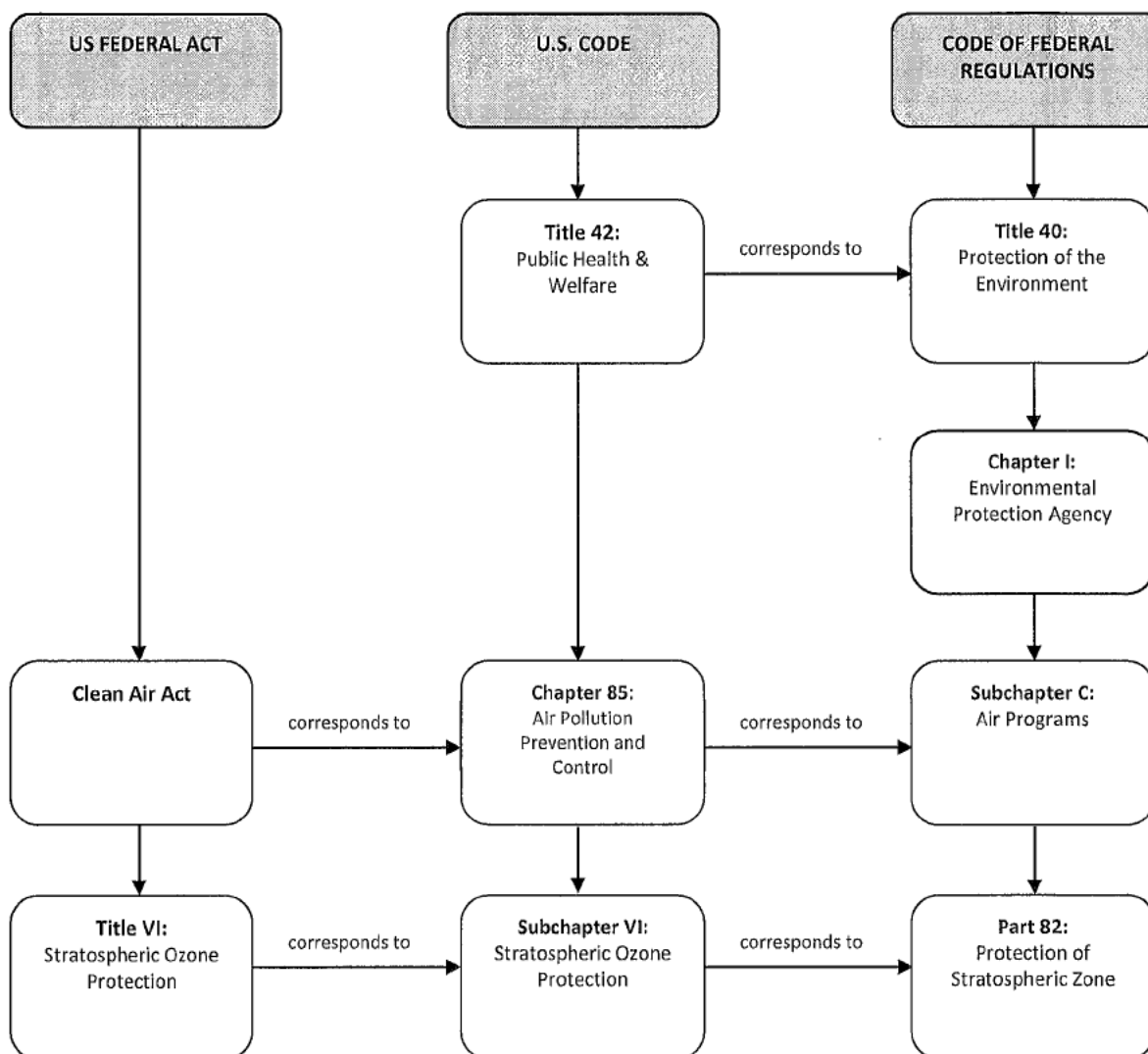
### The Clean Air Act in Relation to Ozone Depleting Substances

To implement the Montreal Protocol and protect the ozone layer from further destruction, the United States enacted Title VI of the Clean Air Act in 1990, entitled *Stratospheric Ozone Protection*. Section 608 of Title VI covers requirements for Recycling and emission reduction of Ozone-Depleting Substances.

## How is the Clean Air Act Implemented?

Congress passes legislation to make a federal act, for example, the *Clean Air Act* (CAA). The acts (or laws) are then codified into the *U.S. Code* (USC). Regulatory agencies (like OSHA or EPA) create rules and regulations to implement these laws when applicable, which are incorporated into the *Code of Federal Regulations* (CFR). For example, Section 608 of the CAA is implemented through regulations created by EPA in CFR Title 40, Chapter 1, Subchapter C, Part 82.

The following table illustrates how some of the regulations pertaining to Refrigerants are related within the structures of the Clean Air Act, U.S. Code, and Code of Federal Regulations.





# Refrigerant Policies

## Ocean Companies Refrigerant Policies

---

It is the policy of Ocean Companies to comply with EPA Refrigerant regulations in 40 CFR 82 and the Consent Decree. This plan is written to facilitate compliance with these regulations and agreements.

Ocean Companies, Westport WA includes the Ocean Gold Facility, Ice House and the Ocean Cold storage Facility. These policies apply to the Ice House Facility. For a definition of "Facility" as defined by the Consent Decree, see the glossary definition of "Facility."

As part of the above policy, the following directives will be observed:

- Only certified Technicians (certified through an EPA-approved certification course) will maintain, service, Repair, or dispose of fluorocarbon refrigeration Systems and Appliances, and will do so in accordance with EPA regulatory requirements (See *Certified Technicians*).
- Only EPA-approved certified Technicians will purchase Class I or Class II (fluorocarbon) Refrigerants (See *Certified Technicians*).
- There will be no deliberate Venting or release of Refrigerants into the atmosphere unless covered by an EPA-approved exception (See *Venting and Releases*).
- Fluorocarbon Refrigerants will be Recovered, Reclaimed, Recycled, and transferred only by certified Technicians using Certified Recycling and Recovery Equipment, in accordance with federally required procedures (See *Refrigerant Recovery Procedures and Recovery, Reclaiming, Recycling ("Disposal") and Recovery Procedures and Requirements*).
- Fluorocarbon Refrigerant Systems will be disposed of, transferred, or sold in accordance with EPA regulations (See *Purchasing, Selling, Distribution*).
- Leak Repairs, leak Repair extensions, Retrofitting, Retiring, shutdowns, and/or Mothballing of fluorocarbon Refrigerant Systems will be implemented in accordance with EPA regulatory requirements (See *Leak Trigger Rates & Exceedance Procedures*).
- All records required or otherwise kept as part of the Refrigerant tracking and management program will be maintained for a minimum of 5 years after the Consent Decree is terminated (See *Overview and Maintenance, Service, and Repair Procedures*).

Further, Ocean Companies' policy is to comply with all other requirements concerning fluorocarbon Refrigerants, which include the following:

- The Consent Decree, while it remains in effect.
- ASHRAE Standard 15, Safety Code for Mechanical Refrigeration (See *Refrigerants*).
- ASHRAE Standard 34, Designation and Safety Classification of Refrigerants (See *Refrigerants*).
- Federal and State Emergency Planning & Community Right-to-Know Act (EPCRA) TRI and Tier II reporting (See *EPCRA Reporting Procedures*).

# **Compliance Responsibilities**

## Management Responsibilities

---

### Safety and Compliance Manager

The **safety and compliance manager** has responsibility for program support and oversight, administrative control of the RCMP and has the authority to enact changes necessary for compliance.

The **safety and compliance manager** shall perform the following specific tasks:

- Ensure compliance with the Refrigerant Compliance Management Plan (RCMP) and Consent Decree is a company priority and appropriate procedures are implemented to ensure compliance.
- Assume or delegate responsibility as Ocean Companies regulatory representative.
- Conduct research as needed to answer questions from Facilities.
- Conduct checks as often as necessary to ensure that appropriate documentation is being maintained at each Facility. Review each Facility's compliance documentation at least monthly.
- Communicate with contractors and ensure they are aware of all requirements as outlined in this manual and that all relevant information provided by contractors is entered into appropriate forms.
- Schedule and ensure that biannual third-party inspections occur, and ensure that biannual, unscheduled third-party audits of records occur, as required by the Consent Decree.
- Annually, ensure proper measurement of the Current Charge of each System, as required by the Consent Decree.
- At the beginning of each Refrigerant Year, calculate the percentage lost during the past year as required by the Refrigerant Release Reduction Program in the Consent Decree.
- Annually, tally Refrigerant used at each Facility and ensure EPCRA Tier II and TRI reporting is completed accurately and submitted on time.
- At the beginning of each Refrigerant Year, submit the required documents and calculations to EPA, as required by the Consent Decree.
- If necessary, report violations of the Consent Decree to EPA as required by the Consent Decree.
- Review the Refrigerant Compliance Management Plan (RCMP) at least annually and update as needed, including if regulations are amended or legal requirements change. Submit proposed changes to EPA before implementing per the Consent Decree.
- Be familiar with and understand the current regulations pertaining to the handling, control, and proper Disposal of ozone depleting substances.
- Monitor compliance and communicate deficiencies to management in writing.
- Maintain *Form A-Certified Technicians*, *Form B-Contractors*, *Form C-Recovery Devices*, *Form E-Freon Systems*, *Form F-Freon Tracking Log*, *Form H-Leak Rate Calculator*, *Form J-Disposal Record*, and *Form N-System Maintenance Log*.
- Implement future policy changes as needed.

### General Manager

The **general manager** must ensure that Refrigerants are handled according to plan requirements, and shall perform the following specific tasks:

- Ensure compliance with the Refrigerant Compliance Management Plan (RCMP) and Consent Decree is a company priority and appropriate procedures are implemented to ensure compliance.
- Ensure only certified Technicians are allowed to work on Ocean Companies Systems.
- Ensure employees receive training required by this plan.
- Ensure proper documentation of training, as required by the Consent Decree.
- Ensure disciplinary procedures are in place for failures to comply.
- Budget appropriately for compliance requirements.

### **Maintenance Manager**

The **maintenance manager** has responsibility for implementation of this plan and shall communicate compliance issues to all affected employees, Technicians and contractors. The **maintenance manager** shall perform the following specific tasks:

- Ensure compliance with the Refrigerant Compliance Management Plan (RCMP) and Consent Decree is a company priority and appropriate procedures are implemented to ensure compliance.
- Implement the Refrigerant Compliance Management Plan (RCMP).
- Ensure certification of all Technicians before they are allowed to work on equipment.
- Coordinate and conduct annual training in accordance with the Consent Decree.
- Coordinate on-going training of employees in Refrigerant recovery, Recycling, Appliance and equipment Repair and regulatory or policy changes. Conduct additional training for System Technicians and maintenance employees in program requirement and in their job tasks.
- Maintain written SOPs (Standard Operating Procedures); update as needed to reflect current practice (See *Standard Operating Procedures* for list of procedures on file at Ocean Companies).
- Communicate with contractors to ensure they understand and comply with company policies as described in this plan.
- Identify and procure necessary equipment and services required to comply with regulations.
- Oversee the transportation and Disposal of Refrigerant, used Refrigerant, used oil, and parts.
- Identify when it is necessary to order or add more Refrigerant by communicating with the Refrigerant Technician.
- Provide input for budget planning for Refrigerant management.
- Identify risks associated with Refrigerant issues and communicate these risks to management.
- Monitor compliance and communicate deficiencies to management.
- Ensure that the *Form I-Leak Repair Report*, the *Daily Refrigeration Maintenance Log*, and the *Leak Check Log* are properly completed by the **Refrigerant Technicians** and delivered monthly to the **safety and compliance manager**.

### **Refrigerant Technician**

The **Refrigerant Technician's** responsibility is to understand the Refrigerant Compliance Management Plan (RCMP) requirements as they relate to their work. The **Refrigerant Technician** is responsible for complying with federal regulations and the requirements of the RCMP. The **Refrigerant Technician** shall perform the following specific tasks:

- Ensure recovery units meet EPA evacuation requirements and they are properly tested and maintained per OEM requirements.
- Maintain, leak test, and Repair Refrigeration Appliances.
- Conduct (and document) Initial and Follow-Up Verification Tests when Repairing leaks.
- Inspect Certified Refrigerant Recovery or Recycling Equipment before each use to verify that it is functioning properly and Repair or replace any equipment that is not functioning correctly before servicing any appliances.
- Follow procedures to eliminate Refrigerant contamination and mixing.
- Ensure Refrigerants are not Vented during servicing.
- Pressure and vacuum the System to required levels.
- Conduct service only in accordance with level of certification.
- Complete *Form I-Leak Repair Report* whenever Repairing leaks.
- Document all Repairs and maintenance in the *Daily Refrigeration Maintenance Log*.
- Document all regular leak checks in the *Leak Check Log*.

- Communicate with the maintenance manager regarding when it is necessary to order or add more Refrigerant based on System operations.

Responsibilities for specific records are listed below.

Safety and Compliance Manager	
OCEAN COMPANIES COMPLIANCE TASKS/RESPONSIBILITIES	RECORD(S)
Submit accurate annual EPCRA Tier II reports to the SERC, LEPC and local fire department and TRI reports to US EPA, on-time, as appropriate and as required. Ensure receipts are maintained on file for all mailings. TRI reports are due by July 1, and EPCRA Tier II forms are due by March 1.	<ul style="list-style-type: none"> <li>• <i>TIER II Reports</i></li> <li>• <i>TRI Reports</i></li> <li>• <i>Records of submission/receipt</i></li> </ul>
At the beginning of each Refrigerant Year, submit the necessary documentation and calculations to EPA to ensure compliance with the Consent Decree. Report violations of the Consent Decree more frequently if necessary. Documentation is required within 30 days of the start and 60 days of the close of each Refrigerant Year (Refrigerant Year begins March 15 <sup>th</sup> ).	<ul style="list-style-type: none"> <li>• <i>Training Records, including Annual Training Roster</i></li> <li>• <i>Current Charge determinations and Amount Released calculations</i></li> <li>• <i>All forms and records required by this manual</i></li> </ul>
Ensure the Current Charge of each System is properly calculated and documented. Maintain documentation supporting how the charge of each System has been determined, as required by the Consent Decree.	<ul style="list-style-type: none"> <li>• <i>Annual Current Charge Calculations</i></li> <li>• <i>Form E-Freon Systems</i></li> <li>• <i>Form M-Refrigerant Release Calculation</i></li> </ul>
At the beginning of each Refrigerant Year, calculate the percentage lost in accordance with the Refrigerant Release Reduction Program as required by the Consent Decree.	<ul style="list-style-type: none"> <li>• <i>Form M-Refrigerant Release Calculation</i></li> </ul>
Ensure the bi-annual third-party audits are conducted as required by the Consent Decree, and the audit report delivered to EPA as required.	<ul style="list-style-type: none"> <li>• <i>Third-party Audit Report</i></li> </ul>
Maintain records of all EPA-approved certified Technicians employed at the Facility.	<ul style="list-style-type: none"> <li>• <i>Form A-Certified Technicians</i></li> </ul>
Maintain records of all EPA-approved certified Technicians contracted by the Facility.	<ul style="list-style-type: none"> <li>• <i>Form B-Contractors</i></li> </ul>
Maintain records of annual training in accordance with the Consent Decree.	<ul style="list-style-type: none"> <li>• <i>Annual Training Roster</i></li> </ul>
Maintain equipment inventory records for Systems.	<ul style="list-style-type: none"> <li>• <i>Form E-Freon Systems</i></li> </ul>
Maintain inventory records for Refrigerants.	<ul style="list-style-type: none"> <li>• <i>Purchase/Delivery Receipts</i></li> </ul>

	<ul style="list-style-type: none"> <li>• <i>Form F-Freon Tracking Log</i></li> </ul>
Maintain records for leak Repair extensions, Retrofitting, Retiring, shutdowns, and/or Mothballing of Appliances when applicable.	<ul style="list-style-type: none"> <li>• <i>Keep documentation</i></li> </ul>
Verify and transfer information from <i>Daily Refrigeration Maintenance Log</i> into <i>Form N-System Maintenance Log</i>	<ul style="list-style-type: none"> <li>• <i>Daily Refrigeration Maintenance Log</i></li> <li>• <i>Form N-System Maintenance Log</i></li> </ul>
Review all Form I-Leak Repair Reports for accuracy and completeness, including leak Repairs and verification tests (per the Consent Decree). Maintain hard and scanned copies on file.	<ul style="list-style-type: none"> <li>• <i>Form I-Leak Repair Report</i></li> </ul>
Review all <i>Leak Check Logs</i> for accuracy and completeness. Maintain hard and scanned copies on file.	<ul style="list-style-type: none"> <li>• <i>Leak Check Log</i></li> </ul>
Maintain maintenance, service, and Repair records.	<ul style="list-style-type: none"> <li>• <i>Daily Refrigeration Maintenance Log</i></li> <li>• <i>Form I-Leak Repair Report</i></li> <li>• <i>Form N-System Maintenance Log</i></li> </ul>
Maintain records of modification to Appliances, including documentation of additions or removals of new components (per the Consent Decree).	<ul style="list-style-type: none"> <li>• <i>Daily Refrigeration Maintenance Log</i></li> <li>• <i>Form I-Leak Repair Report</i></li> <li>• <i>Form N-System Maintenance Log</i></li> </ul>
Maintain Leak Rate calculation records for Systems whenever Refrigerant is added to the System or whenever Refrigerant is lost or released, whether due to leaks or other causes (per the Consent Decree).	<ul style="list-style-type: none"> <li>• <i>Form F-Freon Tracking Log</i></li> <li>• <i>Form H-Leak Rate Calculator</i></li> </ul>
Maintain records for Disposal, transfer, and sales of Refrigerant Systems.	<ul style="list-style-type: none"> <li>• <i>Form J-Disposal Record (for Disposal, sales, and transfers)</i></li> </ul>
<b>Maintain all records for a minimum of 5 years after the termination of the Consent Decree.</b> Notify EPA of the future destruction of documents when no longer needed, at least 90 days prior to the destruction of the records.	
<b>Maintenance Manager</b>	
<b>OCEAN COMPANIES COMPLIANCE TASKS/RESPONSIBILITIES</b>	<b>RECORD(S)</b>
Ensure Technicians properly complete maintenance, service, and Repair records for Appliances and Systems.	<ul style="list-style-type: none"> <li>• <i>Daily Refrigeration Maintenance Log</i></li> <li>• <i>Form I-Leak Repair Report</i></li> </ul>
Ensure Technicians document all regular leak checks (except those covered by <i>Form I</i> on the <i>Leak Check Log</i> ).	<ul style="list-style-type: none"> <li>• <i>Leak Check Log</i></li> </ul>
Ensure all applicable employees receive annual training in accordance with the Consent Decree.	<ul style="list-style-type: none"> <li>• <i>Annual Training Roster</i></li> </ul>
Review all Technician logs and reports for accuracy and	<ul style="list-style-type: none"> <li>• <i>Leak Check Log</i></li> </ul>

completeness.	<ul style="list-style-type: none"> <li>• <i>Daily Refrigeration Maintenance Log</i></li> <li>• <i>Form I-Leak Repair Report</i></li> </ul>
Ensure that forms and documents are properly transferred between the Refrigerant Technicians and the Safety and Compliance Manager.	<ul style="list-style-type: none"> <li>• <i>Leak Check Log</i></li> <li>• <i>Daily Refrigeration Maintenance Log</i></li> <li>• <i>Form I-Leak Repair Report</i></li> </ul>
Provide all purchase and delivery receipts to the safety and compliance manager.	<ul style="list-style-type: none"> <li>• <i>Purchase/Delivery Receipts</i></li> </ul>
Notify the <b>safety and compliance manager</b> , the <b>general manager</b> , and the <b>CFO</b> whenever a leak Repair fails the 30-day Follow-Up Verification Test following a Repair.	<ul style="list-style-type: none"> <li>• <i>Email</i></li> </ul>
<b>Refrigerant Technician</b>	
OCEAN COMPANIES COMPLIANCE TASKS/RESPONSIBILITIES	RECORD(S)
Log all charging, evacuation, maintenance, testing, inspection, servicing and Repairs to the refrigeration Systems in the <i>Daily Refrigeration Maintenance Log</i> .	<ul style="list-style-type: none"> <li>• <i>Daily Refrigeration Maintenance Log</i></li> </ul>
Document all regular leak checks (except those covered by <i>Form I</i> on the <i>Leak Check Log</i> .	<ul style="list-style-type: none"> <li>• <i>Leak Check Log</i></li> </ul>
Document all leak Repairs thoroughly, completely and legibly on <i>Form I-Leak Repair Report</i> .	<ul style="list-style-type: none"> <li>• <i>Form I-Leak Repair Report</i></li> </ul>

### Contact Information

Safety and Compliance Manager:	Al Carter	360-581-3220
CFO:	TBD	
General Manager:	Greg Shaughnessy	360-310-0662
Maintenance Manager:	Eric Rydman	360-591-2107
Ocean Cold Maintenance (Technician):	Lonnie Humbryd	360-310-0660
Ice House Manager (Technician):	Pat Walker	360-581-1264
Ocean Cold Production (Technician):	Jeff Princehouse	360-310-0658

### Training

#### Annual Training (per the Consent Decree)

All employees who handle Refrigerant, operate, service, or maintain Refrigeration Appliances, or complete records or reports related to Refrigerants, must complete training on refrigeration management at least annually. The first training must be completed no later than 90 days after the effective date of the Consent Decree, and must include the following topics:

1. Relevant legal requirements under Section 608 of the Clean Air Act, its implementing regulation at 40 CFR Part 82 Subpart F, and relevant EPCRA reporting procedures.
2. Ocean Companies policies and procedures as described in this manual, and



3. Employees' and contractors' individual responsibilities as described in this manual and the Consent Decree.

All training must be documented and will include:

- Name of trainer
- Name and title of trainee
- Date of training
- Description of training including topics covered
- Means used to verify understanding

Per the Consent Decree, training documentation will be submitted to EPA for each Refrigerant Year. Training records must be kept and maintained for a minimum of five years after the Consent Decree has been terminated.

Training will be organized and facilitated by the **safety and compliance manager**. However, ensuring each Person covered by the plan and Consent Decree attends and participates in the required training is the responsibility of the **general manager**.

#### **On-the-job Training**

On-the-job training will also be provided for and verified by the **maintenance manager**, who will ensure each Person who works on a System is qualified, and adequately trained in the job tasks that they will perform.

#### **Technician Training and Certification**

Ocean Companies shall use only contractors or in-house service Technicians that are currently certified through an EPA-approved certification course to conduct the Recycling, recovery, or reuse of Refrigerants or to service a covered Appliance (any activity that involves access to a Refrigeration Circuit by which Refrigerant could be released). Technician's training and certification must be in accordance with the provisions found in subsection 82.40 of 40 CFR Part 82 Subpart B and subsection 82.161 of 40 CFR Part 82 Subpart F. Technicians must have the appropriate level of certification required for the type of Appliance and recovery/Recycling equipment with which they work.

#### **Contractors Training Requirements**

Refrigeration contractors hired by Ocean Companies shall provide documentation that their Technicians have been trained and certified through an EPA-approved program as mandated in 40 CFR 82.161. The certification must be appropriate to the type of equipment they will maintain, service, or Repair.

#### **Audits**

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Third party audits are required by EPA Consent Decree and will be conducted by a Third Party Verifier (TPV). For a description of TPV hiring, auditing, reporting procedures, and more, see the chapter on *Third Party Verifiers (TPVs)*.

# Procedures

## Overview

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Compliance obligations are documented by each Facility largely by using an annual Excel forms workbook and keeping supporting records on file. The following is a list of forms used and supporting documentation required:

**FORM A:** Certified Technicians – certification data must be entered, cards are scanned and maintained on file.

**FORM B:** Certified Contractor Employees – certification data must be entered, cards are scanned and maintained on file.

**FORM C:** Data on Owned Refrigerant Recovery Devices – data on the unit(s) at the Facility must be entered, device registrations are sent to EPA, completed registrations and proof of mailing must be maintained on file.

**FORM D:** No entries needed – information on where to find the EPA recovery device registration forms is provided on this form.

**FORM E:** Freon Systems – required information on System(s) at the Facility must be entered, including the Current Charge calculation as required by the Consent Decree.

**FORM F:** Freon Tracking Log – entries are required each time Freon is added to, removed, or leaked from the System, or transferred in and out of stored cylinders (inventory). When Freon is stored in cylinders, cylinder ID numbers must be noted on Form F. Delivery receipts for all Freon purchased must be scanned and maintained on file.

**FORM G:** Freon Inventory – no entries required. The information on this form generates automatically from entries on Form F. The purpose of this form is to see the current amount in each System, the current amount stored in cylinders at the Facility, and to see how much Freon has leaked from each System. TRI forms will not be calculated directly from this Form, as TRI forms require the total amount of Freon added, not just that which has replaced that which leaked.

**FORM H:** Leak Rate Calculator – any time Freon is added to a System that was not deliberately removed on a previous date, the amount must also be entered into Form H. Additionally, all Refrigerant losses or releases, regardless of the cause, must be recorded here. When required information is entered, the form calculates the annualized Leak Rate for the System. If the Leak Rate exceeds 35%, the Leak Rate cell turns red, and the entire System must be tested for leaks using an electronic leak detector. The inspection of the entire System must be completed within 7 days. A Form I is used to document the System inspection.

**FORM I:** Leak Repair Report – this form must be printed and filled out by hand to document the Repair of all leaks discovered, including initial and follow up verification tests. Ocean Companies will conduct initial and follow up verification tests each time a leak is Repaired, not just when the Leak Rate exceeds an annualized rate of 35%. When completed, the information will be entered into an electronic form and both the hand written and typed version will be maintained on file.

**FORM J:** Disposal Record – Any Disposal of Freon Systems must be documented on this record. The record must be printed, filled out by hand, scanned when completed, and maintained on file.

**FORM L:** Reserved.

**FORM K:** Reserved.

**FORM M:** Refrigerant Release Calculation (per the Consent Decree) – the required information, including the new Current Charge for the Refrigerant Year, must be entered. The Refrigerant Release Reduction Program loss percentage is then calculated. Documentation supporting the Current Charge determination must be maintained on file.

**FORM N:** System Maintenance Log – all maintenance, tests and inspections must be entered into this log, including all leak inspections and leak Repairs.

**ANNUAL TRAINING ROSTER:** (per the Consent Decree) Proper training documentation, including annual training required by the Consent Decree, must be maintained on this form, kept on file, and submitted to EPA each Refrigerant Year.

**DAILY REFRIGERATION MAINTENANCE LOG:** All charging, evacuation, maintenance, testing, inspection, servicing and Repairs to refrigeration Systems must be logged in this log. This log must be reviewed regularly and provided to the Safety and Compliance Manager for data entry into Form N.

**LEAK CHECK LOG:** Regular (not triggered by a leak Repair) leak checks must be logged in this log.

Forms workbooks must be maintained on an annual basis, based on the Refrigerant Year as outlined by the Consent Decree. A new forms workbook will be started at the beginning of each Refrigerant Year with a new Current Charge determination. Each year the workbook will be saved by Refrigerant Year and a new one started. Refrigerant Year-end information will be transferred to a new workbook by the **safety and compliance manager** and the new workbook provided to the **maintenance manager**. The **safety and compliance manager** must keep all completed workbooks electronically for at least five years after the Consent Decree has been terminated. The **safety and compliance manager** will also ensure that all electronic documents are printed and a hard-copy is maintained on file for at least five years after the Consent Decree has been terminated.

Additionally, copies will be provided electronically to the **CFO** at the end of each year and to the third-party verifier as required by the Consent Decree.

### **Standard Operating Procedures**

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The following Standard Operating Procedures (SOPs) are on file at Ocean Companies. They can be found in the **maintenance manager's** office and are accessible to all maintenance personnel, managers, and supervisors. These procedures should be used whenever completing an applicable task.

- Isolating/Evacuating Equipment
- Ocean Companies Leak Repair Procedure
- Ocean Companies Leak Testing Procedure
- Summary of Operation for Pump Out of System Using Compressors

### **Covered Systems**

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Ocean Companies is a fish processing Facility that maintains a fish processing Facility (Ocean Gold), an Ice House (to provide ice for fish processing as well as fishing vessels), and a cold storage Facility (Ocean Cold). Ocean Companies uses Refrigerant R-22 at the Ice House facility to freeze fish, using plate freezers, spiral freezers and blast freezers and ice makers for the making of ice. The Ocean Gold and Ocean Cold Facilities use Refrigerant R-507.

At this time, the Systems covered by this manual are 1) Ice House System. A separate annual forms workbook will be maintained for each of these Systems. The Consent Decree's definition of "Facility" is included in the glossary, and may be referenced to ensure all Facilities covered in the Consent Decree follow the required regulation.

There is no drawing for the Ice House System. The Ice House is located on the Washington Crab dock. It is owned by Washington Crab but it is operated and maintained by Ocean Gold. There are three (3) ice makers in the ice house and they are operated with R-22.

### **Current Charge Determination Procedures (per the Consent Decree)**

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While complying with the Consent Decree, Ocean Companies will use an annual Current Charge determination to implement the Refrigerant Release Reduction Program and to calculate the annualized Leak Rate of the Systems (See the Leak Trigger Rates and Exceedances Procedures Section for more information about these calculations).

To do this, within 15 days of the start of each Refrigerant Year (RY), the **safety and compliance manager** will ensure that a Current Charge is set for each Appliance. This charge determination will be recorded in *Form E-Freon Systems* and *Form M – Refrigerant Release Calculation*, and supporting documentation will be maintained on file.

See the Consent Decree for more specific instructions on how to complete the Current Charge determination.

This procedure will begin with RY 2016.

The documentation for the calculations and the Current Charge determination will be maintained and kept on file by the **safety and compliance manger**.

### **Adding a New Appliance (per the Consent Decree)**

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If Ocean Companies installs or puts into operation any new Refrigeration Appliance at any Facility during the pendency of the Consent Decree, the Appliance will also be subject to the Consent Decree beginning with the next full Refrigerant Year following the date the Appliance was put into service. The following requirements will apply:

- 1) New Appliances will have a Current Charge determination at the time they are put into service by measuring the amount of refrigeration put into the Appliance at that time. This amount will be set as the Current Charge for the upcoming Refrigerant Year.
- 2) For subsequent years, the Current Charge will be set using the Current Charge determination procedures for new Appliances that are outlined in the Consent Decree.

### **Adding/Removing Refrigerant Procedures**

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If Refrigerant is withdrawn from the System for any reason, such as due to contamination, for service work, or for System pressure testing, all Refrigerant must be carefully Recovered and weighed. The withdrawal must be detailed on *Form F-Freon Tracking Log*. When the Refrigerant is charged back into the System, the addition must also be recorded in detail on *Form F-Freon Tracking Log*. See manual section *Maintenance, Service, and Repair Procedures* for a detailed description of evacuating and opening a System.

Refrigerant added to a System for any other reason than that which has been deliberately removed is assumed to replace that which has leaked. When adding Refrigerant, on *Form F-Freon Tracking Log*, enter "yes" in column E "Refrigerant Added for any Reason Other Than a Previous Deliberate Removal?" Also in the column L of *Form F*, labeled "Description of Refrigerant Movement," select, "Refrigerant added, other." This entry will then be highlighted in red, prompting an entry into *Form H*.

Whenever adding Refrigerant to a System for any reason unless replacing Refrigerant that was deliberately previously removed, a Leak Rate calculation must be performed. In addition to entering the charging activity on Form F, enter the information on *Form H-Leak Rate Calculator* unless adding Refrigerant that was deliberately removed. *Form F* and *Form H* do not automatically synchronize.

The **maintenance manager** decides when it is necessary to order/add more Refrigerant to a System based on the information provided by, and the recommendations of the **Refrigerant Technicians**. More Refrigerant is needed when minimal operational levels cannot be reliably maintained in System vessels, pumps are at risk of shutting down on low level repeatedly, or when product cannot be cooled or frozen adequately, or in an acceptable timeframe. When Refrigerant is needed, it is ordered from a Refrigerant vendor, or through a refrigeration contractor.

Levels and usage is monitored every day. The System is checked for leaks daily. These regular leak checks are logged on the *Leak Check Log*.

#### **Filling Refrigerant Cylinders**

Refrigerant cylinders should not be filled in excess of 80% of the liquid capacity. It is considered overfilling if a cylinder is filled more than 80%.

#### **Refrigerant Tracking Procedures**

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To maintain a current inventory of all ozone-depleting Refrigerants at the Facility, stored in Systems and in cylinders, and to monitor total losses throughout the year, purchases, sales, and destruction of Refrigerants, as well as additions to and transfers between Appliances, will be logged on *Form F-Freon Tracking Log* by the **safety and compliance manager**.

The Refrigerant in all cylinders containing Freon and stored for use at the Facility will be tracked on *Form F-Freon Tracking Log* and identified by cylinder number by the **safety and compliance manager**.

#### **Leak Rate Calculation Procedures**

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A Leak Rate calculation must be completed every time Refrigerant is added to any Refrigeration Appliance.

The calculation will:

- 1) Take into account leaks in Appliances, human error in operating Appliances, or intentional venting of an Appliance.
- 2) Assume that refrigerant that is added to an Appliance to return it to normal operating characteristics is replacing an equivalent amount of Refrigerant lost.

Each time a leak rate calculation must be completed, the **safety and compliance manager** will enter the amount added and other required data into *Form F-Freon Tracking Log* and *Form H-Leak Rate Calculator*.

See manual section "*Leak Repair Procedure*" for a detailed outline of steps for proceeding whenever a leak is discovered.

The **maintenance manager** will notify the **safety and compliance manager**, the **general manager**, and the **CFO** whenever a leak Repair fails the 30-day Follow-Up Verification Test following a Repair.

A joint determination will be made by the **CFO**, **general manager**, **safety and compliance manager**, and the **maintenance manager** to determine when EPA needs to be notified, and who will do so, based on the decisions made regarding the above process.

See manual section "*Leak Trigger Rates & Procedures*" for more detailed instructions regarding testing and notification requirements.

### **Leak Repair Procedures**

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It is the policy of Ocean Companies to adhere to a preventive maintenance program that requires periodic testing to ensure Refrigerant System integrity. The Facility shall use its standard operating procedures (SOPs) for conducting leak testing relative to their equipment and Refrigerant Systems maintained (See manual section "*Standard Operating Procedures*" for a list of relevant SOPs at Ocean Companies). Leak tests shall be conducted on all Systems and shall be conducted with current technology. All System leaks shall be reported on *Form I-Leak Repair Report*.

Any leaks that are detected must be reported to the **maintenance manager** immediately. After discovery of a possible leak the System must be shut down and the leak isolated. At the nearest points on either side of the area with the leak, the valves must be closed to isolate the area involved, taking care not to trap liquid Refrigerant without room for expansion.

Once the leak area has been closed off, the remaining Freon within the area must be Evacuated using the Promax recovery device or the System internal recovery procedure. Once the remaining Freon has been Evacuated the Repairs must be completed. A detailed description of the Repairs and any replacement parts or Repairs must be recorded in the Refrigeration Daily Maintenance Log. See *Maintenance, Service, and Repair Procedures* for a detailed description of steps for evacuating and opening a System.

The component will be pulled down into a 10" Hg vacuum using the System, a combination of the System and a recovery device, or by using a recovery device, before the component is opened, unless the service is specifically covered under an EPA exception (see (4) in manual section *Maintenance, Service, and Repair Procedures*).

An explanation of the Repair procedure and any Repairs must be recorded in the *Daily Refrigeration Maintenance Log*, including the date and the time. You must record whether this is a mechanical failure or human error. If it is a mechanical failure, describe the failure, what equipment is involved and what needs to be done. If it is human error, we must find out why, how, and who so that we can determine the cause and avoid the human error in the future. All Repairs must also be documented on *Form I-Leak Repair Report*.

Every time a leak is Repaired, the **maintenance manager** will ensure that a responsible Technician(s) performs initial and follow up verification tests (this is in addition to the daily leak checks; see manual section "*Daily Leak Checking Procedures*"). The Initial Verification Test will be completed immediately after performing Repairs and a Follow-Up Verification Test of the entire System will be completed within

30 days of charging. Both the Initial Verification and Follow-Up Verification Tests will be documented on *Form I-Leak Repair Report* by the Technician(s).

If no leaks are found during the Initial Verification Test, a follow up check of the entire System will be performed within 30 days. If a leak(s) is found, the leak will be Repaired and verified, and a follow up verification test will be performed at least 24 hours after the first test, but no longer than 30 days after the first test. These tests will be documented on a *Form I-Leak Repair Report*.

Acceptable initial and Follow-Up Verification Test methods include the following:

- soap bubble test
- electronic leak detectors
- ultrasonic leak detectors
- pressure test
- vacuum test
- fluorescent dye and black light test
- infrared test
- near infrared (back scatter absorption gas imaging) test
- Halon Refrigerant gas detection methods

#### **Refrigerant Recovery Procedures**

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Refrigerants will be Recovered, Recycled, and disposed of by the **Refrigerant Technician** in accordance with the procedures in the section of this plan entitled *Refrigerants*.

A complete manual for the Facility, including operating procedures for evacuating the System, is kept in the **maintenance manager's** office and is accessible to all maintenance personnel, managers, and supervisors.

Ocean Companies shall make available Recycling and recovery equipment that meets EPA requirements. Equipment shall be certified according to standards outlined in subsection 82.36 or 40 CFR Part 82 Subpart B and subsection 82.158 of 40 CFR Part 82 Subpart F. Ocean Companies will certify to EPA the following:

1. Persons maintaining, Repairing, or servicing Appliances at Ocean Companies has acquired, and is properly using, approved equipment and properly trained and certified as outlined in subsection 82.42 of 40 CFR Part 82 Subpart B.
2. Persons maintaining, Repairing, or servicing Appliances for Ocean Companies and Persons disposing of Appliances has acquired Certified Recovery or Recycling Equipment and is complying with the applicable requirements of subsection 82.162 of 40 CFR Part 82 Subpart F.

Appropriately trained and certified service Technicians shall have access to this equipment relative to their respective work area and service Technician certification level. Each work area is responsible for maintaining the Recycling and recovery equipment in good working order. Records shall be maintained by each servicing work area as specified in the equipment manuals, the EPA regulations and /or this program.



Recycling and recovery equipment care and maintenance shall be the responsibility of each service Technician that uses the equipment. The Technician must verify that Recycling and recovery equipment is functioning properly (as specified in the equipment's owner manual) before servicing devices containing ozone depleting substances. Scheduled maintenance shall be conducted according to owner's manual instructions and the service Technician shall replace any Recycling and recovery equipment that is not functioning correctly before any servicing work begins. Service Technicians shall only conduct servicing in accordance with their level of certification.

One recovery unit is stored at Ocean Gold specifically for use at the Ice House. Ocean Cold also maintains a recovery unit for use at Ocean Cold. Units may be used at any location, however when not in use one must be stored at Ocean Gold and one at Ocean Cold.

### **Contractor Procedures**

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Ocean Companies is responsible for ensuring that contractors are aware of the regulations and requirements for compliance with the EPA Clean Air Act (CAA) Section 608, 40 CFR Part 82 and any state and local codes for all Refrigerant-related work. The **safety and compliance manager** will be responsible for entering all information provided by the contractors into appropriate forms. Contractors shall ensure that all contractor employees are made aware of the content of this RCMP prior to beginning work on Refrigerant containing equipment.

The contractor shall provide only EPA-certified Technicians certified for the specific types of Systems owned by the company and using EPA certified and registered recovery/recycle units to perform work on Refrigerant equipment.

The contractor shall submit to the Facility the following information prior to starting any work:

- A list of all service Technicians names and EPA certification numbers and level of certification (copies of EPA Certification Cards are required).
- A list of all recovery/Recycling units to be used and a signed statement that an EPA Recovery Unit Acquisition Certification form has been sent to EPA (a copy of the form is acceptable).

The contractor shall provide the following documentation for entry into Company records:

- Equipment name
- Manufacturer
- Model number
- Serial number
- Location of equipment
- Refrigerant type
- Date of service
- Service, Repair or Disposal description
- Quantity of Refrigerant removed, Recovered, Recycled, Reclaimed or disposed of
- Quantity of lubricant disposed of, and method of Disposal
- Detailed information on any leaks discovered and Repaired
- Name(s) of EPA-certified service Technicians who performed work
- EPA-certified and registered recovery/Recycling units used on equipment
- Copy of Technician certification card

## Daily Leak Checking Procedures

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On a daily basis, the refrigeration System will be examined for potential leaks by a **Refrigerant Technician**. These daily leak checks are to be performed in addition to the initial and Follow-Up Verification Tests used when Repairing leaks.

Using a halide leak detector, the **Refrigerant Technician** will run the tip of the leak detector probe over each compressor, pump, and plate freezer concentrating on seals, associated valve bonnets and stems, flanged connections, fittings and hoses, and any other accessible location where leaks have been known to occur. A leak is detected when the flame turns from blue to green. Wherever a leak is detected, the **Refrigerant Technician** will spray soapy water on the suspected leak to confirm the presence of a leak.

See manual section *Leak Repair Procedures* for a detailed description of how to proceed when a leak is found.

The *Daily Refrigeration Maintenance Log* must be done every day, DAY shift and NIGHT shift. NO exceptions.

See *Maintenance, Service, and Repair Procedures* for a detailed description of evacuating and opening a System.

## Leak Detector Use Procedures

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Twice per day (once each shift) employees will do a thorough, systematic inspection of all equipment in the System, and around all refrigeration equipment.

Ocean Companies utilizes two types of leak detection equipment:

- Halide Leak Detector: Manufacturer is COMSTAR INTERNATIONAL INC. Specification sheets on file. This is a propane halide leak detector that locates non-combustible halide (CFC & HCFC) Refrigerant gas leaks. Leaks are located when the chlorine based Refrigerant gases are drawn in through the probe nose and exposed to a heated copper reactor plate, changing the blue flame to green.
- TEK-Mate Refrigerant Leak Detector: Manufacturer is INFICON, operating manual is on file.

1. Place the tip of the leak-detector probe as close as possible to the site of the suspected leak. Try to position the probe within ¼ inch (5mm) of the possible leak source.
2. Slowly (approximately 1 to 2 inches/second (25 to 50 mm/second)) move the probe past each possible leak point. NOTE: it is important to move the tip of the probe past the leak. If held on a leak, the auto zero feature will gradually zero out the leak signal.
3. When the instrument detects a leak, it will emit a different tone and the LED flash rate will increase to signal the leak.
4. When the TEK-Mate signals a leak, pull the probe past the leak for a moment, then bring it back to pinpoint the location. If the leak is large, set the sensitivity switch to LOW, by quickly pressing the main control button, to make it easier to find the exact site of the leak.
5. Use sprayed soapy water to confirm the leak with the presence of bubbles. If a leak is confirmed, follow the procedure for leak Repair.
6. Return sensitivity to HIGH before searching for additional leaks.
7. When you've finished leak-testing, turn OFF the instrument.

8. Report all leaks immediately to the **maintenance manager**.
9. Complete a *FORM I Leak Repair Report* whenever a leak of any size is detected.

### **Maintenance, Service, and Repair Procedures**

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The **Refrigerant Technician** will maintain a log of maintenance, service, and Repair activities performed on the System. The log shall be maintained on **Form N-System Maintenance**.

Procedure for Ocean Companies Maintenance Log:

- Each day, every day, the Day Report must be filled out.
- Each night shift must fill out the Night Report.
- On each shift, inspections of equipment and leak detection must be done and recorded in the Ocean Companies Daily Refrigeration Maintenance Log.

1. Only an appropriately certified Technician may open a System for maintenance, service, or Repair.
2. All Persons opening a System for **maintenance, service, Repair, or Disposal** must have at least one piece of certified, Self-Contained Recovery or Recycling Equipment available at their business. Persons who maintain, service, Repair, or dispose of only Systems that they own and that contain pump-out units are exempt from this requirement.
3. Prior to opening a System for maintenance, service, or Repair, the Refrigerant (including liquid Refrigerant) must first be Evacuated from the System. The Refrigerant in either the entire unit or the part to be serviced (if it can be isolated) must be Evacuated to the remaining portions of the System, or a specific vessel within the System, or a certified recovery or Recycling machine to a vacuum level of 10" Hg, unless covered by a specific EPA exception (listed below). A Technician must verify that the applicable level of evacuation has been reached in the System or the part before it is opened (see manual section "*Leak Repair Procedures*").
4. Following are **exceptions** to the evacuation requirement in item 3 above. In these cases, evacuation to the levels in the above table may not be possible:
  - a. Evacuation of the System is not required prior to opening if evacuation to the atmosphere is not to be performed **after** completion of the maintenance, service, or Repair, **AND** the maintenance, service, or Repair does not require the removal of the compressor, condenser, evaporator, or auxiliary heat exchange coil, or the maintenance, service, or Repair does not require uncovering an opening of more than four (4) square inches of "flow area" for more than 15 minutes.

In the above case, the System must:

- be Evacuated to a pressure no higher than 0 psig before it is opened.
  - be pressurized to a pressure no higher than 5 psig **only for oil changes**.
- b. Evacuation of the System is not required prior to opening if, because of leaks in the System, evacuation to the required levels is not attainable or would substantially contaminate the Refrigerant being Recovered (40 CFR 82.156[1][ii]).

In such cases, the Technician must try to isolate the leak from non-leaking components as much as possible, Evacuate any non-leaking components to the required levels, and Evacuate leaking components to the lowest level that can be attained without substantially contaminating the Refrigerant (never above 0 psig).

5. Technicians must follow the manufacturer's directions for achieving the required Recovery Efficiency.
6. Refrigerant may be returned to the System from which it is Recovered or to another System owned by the same Person or company without being Recycled or Reclaimed.
7. Log all maintenance and Repairs on *Form N-System Maintenance Log*.
8. Keep all records for a minimum of 5 years after the termination of the Consent Decree.

In addition to these procedures, other procedures are available at the Facility (see *Standard Operating Procedures*).

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### Disposal Procedures

Refrigerants will be Recovered, Recycled, and disposed of by the Refrigerant Technician in accordance the procedures in the section of this plan entitled *Refrigerants*.

Systems that are typically dismantled on-site before Disposal must have the Refrigerant Recovered in accordance with EPA's requirements for servicing prior to their Disposal.

Fill out ***Form J – Disposal of Freon®-Containing Equipment*** whenever you dispose of any System. Form J is not required when parts of the System, or System components, such as plate freezers are decommissioned, or replaced.

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### Recordkeeping Procedures (per Consent Decree)

**All records must be retained until 5 years after the Consent Decree is terminated.** Do not discard records until the **safety and compliance manager** has removed this reference from the RCMP.

At least 90 days before the documents are to be destroyed after the Consent Decree has been terminated (after at least five years), Ocean Companies must notify EPA and deliver documents to EPA if records are requested.

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### RCMP Update Procedures (per the Consent Decree)

The **safety and compliance manager** will review this manual annually. If updates are necessary to comply with Section 608 or the Consent Decree, the **safety and compliance manager** will identify and submit proposed changes to EPA in the annual report. Proposed changes will only be implemented when and if EPA approves of the changes.

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### EPA Reporting Procedures (per the Consent Decree)

The **safety and compliance manager** will report the following records, calculations, and statements to EPA, as required by the Consent Decree. This reporting is in addition to all other reporting requirements as required by the Clean Air Act or federal, state, or local laws, regulations, or permits.

Within **30 days** after the start of each Refrigerant Year, report:

1. Copies of all required records that were generated during the preceding Refrigerant Year.

2. Information regarding the Refrigerant Release Reduction Program for the *prior Refrigerant Year*, including:
  - a. The amount of Refrigerant released from each Appliance using the formula described in the *Refrigerant Release Reduction Program* section.
  - b. Whether or not the amount released in (a) equals or exceeds the release limit for that Appliance (see the *Refrigerant Release Reduction Program* section for release limits).
3. Information regarding the Refrigerant Release Reduction Program for the *current Refrigerant Year*, including:
  - a. The Current Charge that has been set for each Appliance for the current Refrigerant Year.
  - b. The release limit, in pounds, for each Appliance (see the *Refrigerant Release Reduction Program* section for Leak Rates).
4. Information regarding any new Appliances put into service during the preceding Refrigerant Year, including:
  - a. A description of the new Appliance;
  - b. The determination of the new Appliance's Current Charge for the current Refrigerant Year; and
  - c. A recommendation, for each new Appliance, as to which procedure should be used to determine the Current Charge of that Appliance in subsequent Refrigerant Years, along with the basis for such recommendation and all supporting documentation. That information must include whether it is mechanically possible, feasible, and safe to fully pump out the Refrigerant from the new Appliance on an annual basis. The ultimate decision as to the appropriate procedure will be made by EPA.
5. A report of all employee training conducted during the preceding Refrigerant Year (see the *Training* section for all training requirements).

Within **60 days** of the close of each Refrigerant Year, report:

1. Any proposed changes to the RCMP, including the specific pages and lines to be modified, and the reasons why the modification is requested.
2. A response to the Third Party Verifier's most recent report, including:
  - a. An explanation of deviations with which Ocean Companies does not agree.
  - b. A list of actions recommended by the Third Party Verifier that Ocean Companies intends to implement.
  - c. For any action recommended by the Third Party Verifier that Ocean Companies does not plan to implement, an explanation for why Ocean Companies will not or cannot implement the recommendation.

With regard to **EPCRA reporting**:

1. The law requires that EPCRA Tier II and TRI reports be submitted annually to the relevant authorities on time:
  - a. Tier II forms to the SERC, LEPC and local fire department by March 1; and
  - b. TRI forms to EPA's TRI reporting program by July 1
2. The Consent Decree requires that copies of those completed, on-time submissions must also be submitted to EPA, at the addresses in Section XVI of the Consent Decree, **within five days of the submission due date**.

See the following section for more information on EPCRA reporting.

Each report will be signed and submitted with certifications as detailed in the Consent Decree (Section VIII).

Addresses for reporting are detailed in the Consent Decree (Section XVI).

#### **Consent Decree Violation Reporting Procedures**

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If Ocean Companies violates, or believes that they may violate, any requirement of the Consent Decree, Ocean Companies will notify EPA of such violation and its likely duration, in writing, within 72 hours of when Ocean Companies becomes aware of the problem. An explanation of the violation's likely cause and remedial steps taken will be included in the notification.

If Ocean Companies commits a violation or any other action under the Consent Decree that may pose an immediate threat to the public health or welfare or the environment, Ocean Companies will have 24 hours from the time they first knew of the event to notify EPA (orally or electronically).

**These timeframes for reporting Consent Decree violations do not supersede any applicable regulatory deadlines for spill or release reporting at the Facilities. The Companies must still make any reports required by law, on the timeframe set by law.**

For a detailed description of reporting Consent Decree violations to EPA, see the Consent Decree (Section VIII).

#### **EPCRA Reporting Procedures**

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Annually by March 1, the **safety and compliance manager** will submit **Tier II** forms for each Facility to the State Emergency Response Commission (SERC), the Local Emergency Response Planning Committee (LEPC), and the local fire department as authorized by the Emergency Planning and Community Right-to-Know Act (EPCRA).

Tier II forms report chemicals stored on site, including R-22. The yearly report includes information from the previous year, and requires information such as, but not limited to, Facility identification, chemical and product name, physical and health hazards, inventory amounts, and storage condition and location.

More information regarding Tier II reporting can be found at:  
[http://www.ecy.wa.gov/epcra/chemical\\_summary/tier\\_two\\_intro.html](http://www.ecy.wa.gov/epcra/chemical_summary/tier_two_intro.html)

The following contacts are specific to Ocean Companies:

##### **State Emergency Response Commission (SERC)**

Community Right-to-Know Unit  
Department of Ecology  
PO Box 47659  
Olympia, WA 98504-7659

##### **Local Emergency Response Planning Committee (LEPC)**

Grays Harbor County  
Sheriff's Department  
Division of Emergency Management  
310 W. Spruce Street, Suite 212  
Montesano, WA 98563

##### **Local Fire Department**

Westport Fire Department  
170 W. Spokane Ave.  
Westport, WA 98595

Annually, by July 1st, the **safety and compliance manager** will submit **Toxic Release Inventory (TRI)** reports to EPA and Washington State as authorized by EPCRA, Section 313.

The TRI form requires information pertaining to the previous year's operations. The Facility must report information for the listed chemical, including, but not limited to, Facility identification information, environmental permits held, types of activities conducted at the Facility involving toxic chemicals, source reduction activities, and amount of chemical used and managed as waste.

More information regarding the TRI form can be found at:  
[http://www.ecy.wa.gov/epcra/chemical\\_summary/tri\\_intro.html](http://www.ecy.wa.gov/epcra/chemical_summary/tri_intro.html)

# **Leak Rates & Exceedance Procedures**



### Refrigerant Release Reduction Program (per the Consent Decree)

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The Consent Decree requires that, beginning at the start of Refrigerant Year 2017, Ocean Companies will determine the amount of Refrigerant released from each Appliance during the previous Refrigerant Year. This amount will then be recorded and reported to EPA. Use Form M-Refrigerant Release Calculation when determining the amount released (See the *EPA Reporting Procedures* section for more information regarding annual reporting.)

To do this, the Companies must first determine the Current Charge of each Appliance at the start of each Refrigerant Year. See the *Current Charge Determination Procedures* section for more details.

Then, the amount released will be calculated using the following formula:

$$\text{Amount Released in RY } X = [[\text{Current Charge (RY } X)] + [\text{Additions (RY } X)] - [\text{Removals (RY } X)]] - [\text{Current Charge (RY } X+1)]$$

The values are defined as:

- *Current Charge (RY X)*: Current Charge set at the beginning of the preceding Refrigerant Year.
- *Current Charge (RY X + 1)*: Current Charge that has just been set for the Refrigerant Year that just started. If an Appliance was converted or Retired during RY X such that, at the start of the current Refrigerant Year (RY X+1), it no longer contains any amount of any Refrigerant, then the "Current Charge (RY X+1)" for that Appliance shall be zero.
- *Additions (RY X)*: Sum of all Refrigerant amounts added to the Appliance for any reason during RY X, including equipment upgrade and expansions. This value *does not include* any Refrigerant added where a record demonstrates that an equivalent amount was removed from the Appliance during the same Refrigerant Year.
- *Removals (RY X)*: Sum of all Refrigerant that has been permanently removed from the Appliance during RY X (example: for sale or due to removal of equipment or components, or due to conversion or retirement of the Appliance). These removals must be supported by appropriate documentation (example: bill of sale or document of maintenance work).

For example, the calculation done within 15 days of the start of RY 2018 would be:

$$\text{Amount Released in RY 2017} = [(\text{Current Charge set at start of RY 2017}) + (\text{Additions during RY 2017}) - (\text{Removals during RY 2017})] - [\text{Current Charge Set at start of RY 2018}]$$

Refrigerant may not be released from an Appliance in an amount that equals or exceeds the following release limits:

Appliance	Release Amount
Icehouse Appliance	20 percent of the Current Charge
New Appliances	10 percent of the Current Charge

In the event that any of the Appliances listed above is converted or Retired during RY X such that it no longer contains any amount of any Refrigerant, the applicable Release Limit in the table above shall be reduced to an amount proportional to the number of days during the Refrigerant Year that the Appliance contained Refrigerant (i.e., pro-rated).

If the amount released exceeds the percentages listed above, stipulated penalties will be assessed. Refer to the Consent Decree for an explanation of potential penalties.

### **Leak Rate/Trigger Rate**

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The **Leak Rate** of a System is the annualized rate at which the System is losing Refrigerant, measured by calculating the amount of Refrigerant lost between Refrigerant charges; the amount lost is determined by the amount that must be added back into the System to return it to Normal Operating Characteristics. The Leak Rate is expressed in terms of the percentage of the System's Current Charge (per the Consent Decree) that would be lost over a 12-month period if the current rate of loss were to continue over that period. The Leak Rate should be calculated using *Form H-Leak Rate Calculator*.

For refrigeration Systems that normally contain a **Current Charge of more than 50 pounds**, the regulations require Repair of any System that exceeds a "**Trigger Leak Rate**" (or Trigger Rate). The Trigger Rate for the Industrial Process Refrigeration Systems at Ocean Companies is 35%. ***Ocean Companies has committed to Repairing any leak that it discovers, regardless of the Leak Rate;*** the procedures below, however, establish the minimum requirements for leak Repair to comply with current regulations.

Note that the following criteria in *Leak Repair Procedures* may change with future rulemaking. The current regulations should therefore be applied when referencing the manual regarding leak Repairs. However, this manual must be updated as soon as practicable following any such regulatory changes.

#### **1) LEAK REPAIR PROCEDURE: INDUSTRIAL PROCESS REFRIGERATION**

1. To determine the Leak Rate of the System, fill out **Form H – Leak Rate Calculator**. Based on the information entered, the Leak Rate will be automatically calculated (EPA provides two methods for calculating the Leak Rate. This plan uses Method 1 – see glossary for detailed information on Leak Rates.).

If Leak Rate is over 35%, continue with the steps below.

2. **IF SYSTEM IS KEPT RUNNING:** Repair must be made to bring leak below Trigger Rate within 30 days.
  - a. Repair must pass an initial and Follow-Up Verification Test. Initial verification must be conducted within 30 days of completing Repairs, at Normal Operating Characteristics.
  - c. Owners/operators are required to maintain records of the dates, types, and verification tests:

fill out **Form I – Leak Repair Report** to record leak Repair information, including results of initial and Follow-Up Verification Tests (see manual section *Leak Repair Procedures* for a detailed description of initial and Follow-Up Verification Tests, or see 40 CFR 82.156[i][3]).

- d. **EXTENSIONS:** Owners/operators are allowed to make a second Repair effort to fix the same leak(s), if second Repair efforts are completed within 30 days of initial failed Follow-Up Verification Test (owners may attempt as many Repairs as possible within this 30-day time limit). EPA must be notified within 30 days of results of *final* failed or successful Follow-Up Verification Test.
- i. Owners/operators are permitted more than 30 days to Repair leaks if the necessary parts are unavailable or if requirements of other applicable federal, state, or local regulations make a Repair within 30 days impossible. Only the additional time needed to receive delivery of the necessary parts or to comply with the pertinent regulations will be permitted. The following is required:
- Documentation of all Repair efforts.
  - An initial report to EPA explaining why more than 30 days are needed to complete Repairs to be submitted within 30 days of making this determination.
  - Repair must pass both an initial and Follow-Up Verification Test. Owners or operators must maintain records of the dates, types, and results of the initial and Follow-Up Verification Test and must submit this information to EPA within 30 days after conducting each test.

*NOTE: Owners or operators must still conduct all necessary leak Repairs, if any, that do not require any additional time beyond the initial 30 days.*

- e. If, within 180 days of initial failed Follow-Up Verification Test, owner can establish that System's annual Leak Rate does not exceed the allowable annual Leak Rate, owner/operator is required to notify EPA within 30 days of that determination.

- 
3. If all options above have been exhausted and the System is still leaking above the Trigger Rate of 35%:

- Owner or operator must follow the regulatory process for an **INDUSTRIAL PROCESS SHUTDOWN** (see "4" below), **OR**

- Owner or operator must **Retrofit** or **Retire** the equipment (see "5" below).

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4. **INDUSTRIAL PROCESS SHUTDOWN:**

An **Industrial Process Shutdown** is an event in which a Facility **temporarily** ceases to operate or manufacture whatever is being produced at the Facility. Owners/operators are permitted **120 days** to complete Repairs after discovering that the System is leaking at or above the Trigger Rate.

- a. Refrigerant may or may not be required to be Evacuated from the System.
- b. Repair must pass an initial and Follow-Up Verification Test. Initial Verification Test must be conducted at conclusion of the Repairs and Follow-Up Verification Test must be conducted within 30 days of completing Repairs, at Normal Operating Characteristics.
- d. Owners/operators must maintain records of the dates, types, and results of the initial and Follow-Up Verification Tests and must submit this information to EPA within 30 days after conducting each test.
- e. Owners/operators are allowed to make a second Repair effort to fix the same leak(s) if second Repair efforts are completed within 30 days of initial failed Follow-Up Verification Test (Owners/operators may attempt as many Repairs as possible within the 120 day time limit). EPA must be notified within 30 days of results of final failed or successful Follow-Up Verification Test.
- f. Owners/operators are permitted more than 120 days to Repair leaks if the necessary parts are unavailable or if requirements of other applicable federal, state, or local regulations make a Repair within 120 days impossible. Only the additional time needed to receive delivery of the necessary parts or to comply with the pertinent regulations will be permitted. The following is required:
  - Documentation of all Repair efforts.
  - An initial report to EPA explaining why more than 120 days are needed to complete Repairs to be submitted within 120 days of making this determination.
  - Repair must pass both an initial and Follow-Up Verification Test. Owners or operators must maintain records of the dates, types, and results of the initial and Follow-Up Verification Test and must submit this information to EPA within 30 days after conducting each test.

*NOTE: Owners or operators must still conduct all necessary leak Repairs, if any, that do not require any additional time beyond the initial 120 days.*

- g. Owner may not bring System back on-line until an Initial Verification Test demonstrates that leak(s) has been Repaired unless owner decides to Retrofit or Retire System.
- h. If, within 180 days of initial failed Follow-Up Verification Test, owner can establish that System's annual Leak Rate does not exceed the applicable allowable annual Leak Rate, owner/operator is required to notify EPA within 30 days of that determination.

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5. **RETROFIT or RETIRE:** If all options above have been exhausted and the System is still leaking above the Trigger Rate of 35%, the owner or operator must **Retrofit or Retire** the equipment. The owner may begin the process of Retrofitting or Retiring a leaking System **prior** to completing a Follow-Up Verification Test.

A Retrofit or retirement plan must be developed within 30 days of the decision to Retrofit or

- a. Retire the System. Retrofit or retirement of the System must be completed within one year and 30 days of when Leak Rate exceedance was discovered. **EPA will exempt owners from Repairing leaks if owners develop and submit a one-year Retrofit or retirement plan within a specified time period.**
  - b. A legible copy of the Retrofit or retirement plan must be kept with the System.
  - c. A Retrofitted System must use a Refrigerant or Substitute with a lower or equivalent ozone-depleting potential than the previous Refrigerant.
  - d. A Retired System must be replaced with a System that uses a Refrigerant or Substitute with a lower or equivalent ozone-depleting potential.
  - e. The owner/operator may begin the process of Retrofitting or Retiring a leaking System prior to completing a Follow-Up Verification Tests.
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6. **Mothballing:** EPA allows the time-related requirements for Repairing, Retrofitting, or Retiring a leaking System to be temporarily suspended while the System is mothballed. **System Mothballing** is the intentional shutdown of a refrigeration System for an extended period of time, where the Refrigerant has been Evacuated from the System to at least atmospheric pressure, so that Refrigerant leaks that existed when the System was operating have effectively been stopped. The time-related requirements resume on the day the System is brought back on line and is no longer considered mothballed. System Mothballing does not require a report to EPA unless the decision to temporarily mothball a System results in delaying an estimated completion date that has previously been submitted to EPA for Repairing, Retrofitting, or Retiring the System.

**Leak Repairs following Mothballing on Industrial Process Refrigeration Systems are still subject to initial and Follow-Up Verification Tests.**

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# **Third Party Verifiers (TPV)**

**(Required by the Consent Decree)**

## **Overview**

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Ocean Companies will hire a Third Party Verifier (TPV) to ensure compliance with this manual, the relevant Clean Air Act regulations, EPCRA, and the Consent Decree. The TPV will perform audits of Ocean Companies operations, documentation, and reporting, and file an annual report to Ocean Companies and EPA. Read the following sections and the Consent Decree to understand the requirements of the TPV.

## **Hiring**

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Ocean Companies will select two or more proposed consultants and submit the names and qualifications of the consultants to EPA within 30 days of the effective date of the Consent Decree. EPA will then approve or disapprove of each option listed.

For further details regarding the TPV hiring procedure, including required qualifications of the TPV, see the Consent Decree.

## **Third Party Verifier Duties**

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The Third Party Verifier will perform the following duties:

1. At least twice per Refrigerant Year, inspect Ocean Companies Facilities and Appliances to observe leak detection and recordkeeping practices. EPA may also participate and will be given advanced notification of the scheduled inspection.
2. At least twice per Refrigerant Year, conduct an unannounced, unscheduled audit of Ocean Companies' Refrigerant records.
3. Review documents, including this manual, Refrigerant Release Reduction Program documents, training materials and attendance records, Tier II and TRI reports, and all other records required by this manual.
4. Submit annual reports to Ocean Companies and EPA.

For a complete and detailed description of all Third Party Verifier duties, see the Consent Decree.

## **Replacement Procedure**

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If EPA determines that the TPV is unable or unwilling to successfully complete required duties, they may require that a replacement is hired. For further details regarding replacing a TPV, see the Consent Decree.

## **Annual Reports**

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The TPV will provide identical annual reports to EPA and Ocean Companies. The first annual report is due within 30 days after the close of Refrigerant Year 2016, with subsequent reports due within 30 days of the close of each Refrigerant Year.

The annual reports will include information such as:

- A review of EPCRA reporting forms
- A description and review of temporary or permanent physical changes to Ocean Company Systems
- Deviations or deficiencies in operations or recordkeeping, and a summary of actions taken to correct deviations or deficiencies
- The TPV's recommendations to correct or prevent issues identified in the annual report

Ocean Companies and EPA will not be bound by the recommendations or conclusions of the annual report. However, if Ocean Companies violates any requirements of the Consent Decree, Ocean Companies will be liable for penalties regardless of the TPV's recommendations or conclusions.

For a complete description of the requirements of the TPV annual report, including the certification that must be signed, see the Consent Decree.

#### **Ocean Companies Response to TPV Report**

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Ocean Companies must provide a response to the TPV's most recent annual report with the annual report to EPA. See the section titled *EPA Reporting Procedures (per the Consent Decree)* for more information.



# Technicians

## Certified Technicians

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Use **Form A – Certified Freon® Technicians** to keep records of certified Technicians employed by the company.

Only Technicians certified as Type II or Universal may work on Ocean Companies Appliances.

The following people must be certified by an EPA-approved Technician certification program:

1. Technicians who maintain, service, or Repair any Systems that could be reasonably expected to release Refrigerants into the atmosphere.
2. Technicians who dispose of Systems, except for Small Appliances (<5-lb charge) that could be reasonably expected to release Refrigerants into the atmosphere.

The type of certification that is required depends on the type of Refrigerant being used and the characteristics of the System being serviced. The four types of certification identified by EPA regulations are presented in Table 2. Type I, Type II, Type III, and Universal Technicians can buy any Refrigerant sold in containers of 20 pounds or more.

Performing maintenance, service, Repair, or Disposal could be reasonably expected to release Refrigerants only if the activity is reasonably expected to violate the integrity of the Refrigerant circuit. Activities reasonably expected to violate the integrity of the Refrigerant circuit include the following:

- Attaching and detaching hoses and gauges to and from the Appliance or System to add or remove Refrigerant or to measure pressure.
- Adding Refrigerant to and removing Refrigerant from the System.

For a current list of EPA-approved certification programs, visit the following website: <http://www.epa.gov/ozone/title6/608/technicians/608certs.html>.

TECHNICIAN CERTIFICATION TYPES		
Type of Equipment Serviced	Certification Description	Level of Required Certification
Small Appliances (< 5 lbs.) Domestic refrigerators, window air conditioners, PTACs (hermetically sealed air conditioners) and vending machines.	Maintenance, service, or Repair of Small Appliances.	Type I
High and Very High Pressure equipment, all R-22 Systems.	Maintenance, service, Repair, or Disposal of Medium-, High-, or Very High-Pressure Appliances and Systems, except Small Appliances.	Type II
Low pressure equipment, Systems using HCFC-123 or CFC-11 (primarily chillers).	Maintenance, service, Repair, or Disposal of Low-Pressure Appliances and Systems.	Type III
All types.	Certified to perform all activities approved for Type I, II, and III Technicians.	Universal*

\*Universal does not include motor vehicles



**NOTE:** Copies of all certificates of all Technicians employed by the company who maintain, service, and/or Repair refrigeration equipment must be kept on file.

#### Contractors

Use **Form B - Freon® Contractors**, to keep records of outside service providers.

# Refrigerants

## Health and Safety Issues

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All fluorocarbon Refrigerants are heavier than air and release can cause asphyxiation by displacing air in low-lying areas or confined and enclosed spaces. They also pose other safety and health risks. Consult the Material Safety Data Sheet (MSDS) or Safety Data Sheet (SDS) for details.

ASHRAE Standards 15 and 26, Safety Code for Mechanical Refrigeration requires fixed gas leak detectors to be installed in refrigeration machinery rooms, properly sized ventilation Systems, and in certain cases, staging of Self-Contained Breathing Apparatus (SCBA) near machinery rooms.

## Purchasing, Selling, Distribution

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Only certified Type I, Type II, Type III, or Universal Technicians may purchase Class I or Class II Refrigerants.

Purchasers of Refrigerants who employ certified Technicians may provide evidence that at least one Technician is properly certified to the wholesaler who sells them Refrigerant; the wholesaler must then keep this information on file and may sell Refrigerant to the purchaser or his authorized representative. **The purchaser must notify the wholesaler in the event that the purchaser no longer employs at least one properly certified Technician. The wholesaler is then prohibited from selling Refrigerants to the purchaser until such time as the purchaser employs at least one properly certified Technician. At that time, the purchaser must provide new evidence that at least one Technician is properly certified.**

**Used Refrigerants** may only be transferred *between or among a Parent Company and one or more of its subsidiaries, or between or among subsidiaries having the same Parent Company* (unless the used Refrigerant is contained in an Appliance or System).

Only **virgin or Reclaimed Refrigerant** may be transferred *from one owner to a different owner* for use as Refrigerant. Whenever Refrigerant is transferred to another company, an invoice must be generated that contains the following information:

1. Name of Person/company receiving Refrigerant
2. Date of transaction
3. Quantity of Refrigerant transferred
4. Copy of Section 608 Technician certification card on file for receiver of Refrigerant (Refrigerant may not be transferred to anyone without a Technician certification card)

*Documentation of Refrigerant transfers must be kept for at least 5 years after the termination of the Consent Decree.*

## Venting and Releases

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Deliberate Venting or release of CFC or HCFC Refrigerants or Substitute Refrigerants (HFCs) to the atmosphere is prohibited. EPA regulations permit four types of releases as **exceptions** to the prohibition on knowingly Venting Refrigerants:

1. "De minimus" (insignificantly small) quantities of Refrigerants or Non-Exempt Substitute Refrigerants released in the course of good faith attempts by appropriately certified Technicians

to recapture and Recycle or safely dispose of Refrigerants. Refrigerant releases are considered de minimus only if they occur when all EPA regulations are being followed for Recycling and emissions reduction.

2. Refrigerants emitted in the course of normal operation of air condition and refrigeration equipment such as from mechanical Purging and leaks. EPA requires the Repair of leaks in equipment with Refrigerant charges greater than 50 pounds within 30 days, if those leaks result in the loss of more than a certain percentage of the equipment's Refrigerant charge in a year.
3. Releases of CFCs or HCFCs that are not used as Refrigerants. For instance, mixtures of nitrogen and R-22 that are used as Holding Charges or as leak test gases may be released, because in these cases, the ozone-depleting compound is not used as a Refrigerant. However, a Technician may not avoid Recovering Refrigerant by adding nitrogen to a charged System; before nitrogen is added, the System must be Evacuated to the appropriate level.
4. Small releases of Refrigerant that result from Purging hoses or from connecting or disconnecting hoses or gauges to charge or service Appliances will not be considered violations of the prohibition on Venting, but recovery and Recycling equipment manufactured after November 15, 1993 must be equipped with Low-Loss Fittings.

#### Recovery, Reclaiming, Recycling ("Disposal")

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Used Refrigerants are usually Recovered for re-use, Recovered and Reclaimed for re-sale, or Recycled for re-use. All Recycling and recovery equipment used for Recovering, Reclaiming, or Recycling Refrigerants must be certified.

- **Recovered Refrigerant** is Refrigerant that is removed in any condition from an Appliance or System and stored in an external container without necessarily testing or processing it in any way. *Recovered Refrigerant can be put back into the Appliance or System, or into another Appliance or System owned by the same owner as-is; otherwise it must be Reclaimed or Recycled.*
- **Reclaimed Refrigerant** is Refrigerant that is reprocessed to meet specific EPA-prescribed standards applicable to the Refrigerant. The Reclaimed Refrigerant can then be re-sold to other users. Reclamation of Refrigerants can only be performed by EPA-certified Reclaimers. *An owner can send Recovered Refrigerant to an EPA-certified Reclaimer where the Refrigerant will be restored to the Air-Conditioning, Heating, and Refrigeration Institute (AHRI) Standard 700 purity specifications prior to resale.* EPA-certified Reclaimers can be found at this website: <http://www.epa.gov/ozone/title6/608/reclamation/reclist.html>
- **Recycled Refrigerant** is Refrigerant that is Recovered from an Appliance and cleaned for reuse without meeting all of the requirements for reclamation. In general, Recycled Refrigerant is Refrigerant that is cleaned using oil separation and single or multiple passes through devices, such as replaceable core filter-driers, which reduce moisture, acidity, and particulate matter. These procedures are usually implemented at the field job site. *Recycled Refrigerant can only be recharged back into the same owner's equipment.*

Companies that Recycle their Recovered Refrigerants (or that have certified contractors do so) must ensure that the Recycled Refrigerants do not exceed EPA's Maximum Contaminant Levels prior to reuse. The Maximum Contaminant Levels are shown in the table below:

MAXIMUM PERMISSIBLE CONTAMINANT LEVELS FOR RECYCLED REFRIGERANTS			
Contaminants	Low Pressure Systems	R-12 Systems	All Other Systems
Acid Content (by wt.)	1.0 PPM	1.0 PPM	1.0 PPM
Moisture (by wt.)	20 PPM	10 PPM	20 PPM
Non Condensable Gas (by Vol.)	N/A	2.0%	2.0%
High Boiling Residues (by Vol.)	1.0%	0.02%	0.02%
Chlorides by Silver Nitrate Test	no turbidity	no turbidity	no turbidity
Particulates	visually clean	visually clean	visually clean
Other Refrigerants	2.0%	2.0%	2.0%
To ensure that the Recycling equipment maintains its demonstrated capability to achieve the above levels, it must be operated and maintained per the equipment manufacturer's recommendations. Laboratory testing is the only way to fully ensure that contaminant levels are not exceeded; however, if the recycle unit is capable of Recycling Refrigerants to the levels in the table, it is likely that maximum contamination levels will not be exceeded.			

### Recovery and Recycling Equipment

Fill out **Form C – Inventory of Freon® Recovery or Recycling Devices** and **Form D-EPA Form OMB 2060-0256** if recovery or Recycling equipment is kept by the company for use on covered Systems.

Recovery and Recycling equipment that is used to Recover or Recycle Refrigerant must be certified by an Approved Equipment Testing Organization to be capable of achieving the applicable regulatory requirements. It is prohibited to alter Certified Recycling and Recovery Equipment in a way that would affect the equipment's ability to meet EPA's certification standards.

A. EPA has approved the following organizations to certify Recycling and recovery equipment:

- Air-Conditioning, Heating, and Refrigeration Institute (AHRI)  
 Website:  
<http://www.ahridirectory.org/ahriDirectory/pages/home.aspx>  
 Phone: 703-524-8800
- Underwriters Laboratories (UL)  
 Website:  
<http://www.ul.com/global/eng/pages/offerings/industries/Appliancesandhvac/hvacr/refrigeration>  
 Phone: 877-854-3577

B. Each piece of Certified Recycling and Recovery Equipment must be labeled with the following:

THIS EQUIPMENT HAS BEEN CERTIFIED BY [APPROVED EQUIPMENT TESTING ORGANIZATION] TO MEET EPA'S MINIMUM REQUIREMENTS FOR RECYCLING OR RECOVERY EQUIPMENT INTENDED FOR USE WITH [APPROPRIATE CATEGORY OF APPLIANCE.]

C. Companies that acquire recovery and Recycling equipment must certify that these devices meet EPA standards by completing and submitting to EPA an **Environmental Protection Agency Refrigerant**

**Recovery or Recycling Device Acquisition Certification Form OMB 2060-0256 (FORM "D" in this manual).**

**D. General Maintenance Guidelines for recovery Equipment:**

- Follow manufacturer's operating procedures for the equipment being used. Make sure that copies of the operating and maintenance procedures are attached to the equipment. Original operating instructions should be maintained on file.
- Maintain recovery equipment in proper working order. Change filters/dryers: a) when changing to a different Refrigerant type; b) after Refrigerant is recovered from a compressor burn-out; c) according to manufacturer's recommendations.
- Periodically ensure that all units continue to meet EPA-mandated evacuation levels.

**E. The table below indicates the levels of evacuation which must be achieved by recovery or Recycling equipment intended for use with Appliances or Systems with charges over 5 pounds.**

REQUIRED LEVELS OF EVACUATION FOR MAINTENANCE, SERVICE, REPAIR, OR DISPOSAL	
Type of Appliance	Inches of Hg vacuum that must be achieved*
R-22 Appliance, or isolated component of such Appliance, Normally Containing 200 pounds or more of Refrigerant.	<u>10 INCHES HG</u>
*The vacuums specified in inches of Hg vacuum must be achieved relative to an atmospheric pressure of 29.9 inches of Hg absolute.	



**NOTE: Certified Technicians may be asked during an EPA inspection to demonstrate proper operating procedures of a recovery unit. If they cannot demonstrate proper operation, their card may be revoked.**

**Recovery Procedures and Requirements**

**Containers - Labels**

Each container containing a Recovered Refrigerant designated as a Class I or Class II substance is required to display a warning statement indicating that the product(s) inside the container harms the earth's ozone layer. The chemical name of the substance may be abbreviated (e.g. R-22 can be Substituted for "chlorodifluoromethane").

The warning statement is as follows:

**WARNING: CONTAINS [INSERT NAME OF SUBSTANCE], WHICH HARMS PUBLIC HEALTH AND ENVIRONMENT BY DESTROYING OZONE IN THE UPPER ATMOSPHERE.**

Figure 1 is an example of a label for R-22, containing the same warning and the UN identification number for R-22. The label in Figure 2 also demonstrates labeling requirements imposed by the U.S. Department of Transportation (DOT). The label must be placed so that the warning statement is clearly



legible and conspicuous, meaning that it must appear with such prominence and conspicuousness that it is likely to be read and understood by buyers under the ordinary conditions of purchase.

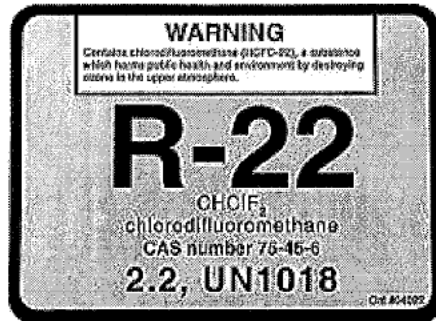


Figure 1 DOT Shipping Label

Federal law requires that each cylinder display green a 4" x 4" DOT diamond "non-flammable gas" label. Figure 2 is an example of this type of label.



Figure 2 DOT Hazardous Material Label

Figure 3 is an example of a Refrigerant usage tag to be attached to a Refrigerant cylinder. Use of this tag is optional.

<b>REFRIGERANT USAGE TAG</b>  REFRIGERANT TYPE _____ CYLINDER ID # _____ WEIGHT IN _____ WEIGHT OUT _____ <small>Detach here before shipment.</small>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">DATE</th> <th style="width: 15%;">TECHNICIAN</th> <th style="width: 15%;">START WEIGHT</th> <th style="width: 15%;">END WEIGHT</th> <th style="width: 40%;">EQUIPMENT</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td colspan="5">COMMENTS: _____</td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td colspan="5">COMMENTS: _____</td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td colspan="5">COMMENTS: _____</td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td colspan="5">COMMENTS: _____</td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td colspan="5">COMMENTS: _____</td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td colspan="5">COMMENTS: _____</td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td colspan="5">COMMENTS: _____</td></tr> </tbody> </table>	DATE	TECHNICIAN	START WEIGHT	END WEIGHT	EQUIPMENT						COMMENTS: _____										COMMENTS: _____										COMMENTS: _____										COMMENTS: _____										COMMENTS: _____										COMMENTS: _____										COMMENTS: _____					<b>REFRIGERANT USAGE TAG</b>  REFRIGERANT TYPE _____ CYLINDER ID # _____ DATE OF ISSUE _____
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**Figure 3 Refrigerant Usage Tag (optional)**

### Containers – Colors

Per *AHRI* guidelines, the body of the recovery container must be gray, and the collar must be yellow (Because all recovery containers follow the gray/yellow color scheme regardless of the type of Refrigerant Recovered, it is imperative that Recovered Refrigerant containers be marked or tagged with the appropriate Refrigerant name to avoid recovering different Refrigerants into the same cylinder.)

Do not use any cylinders that are not color-coded or have an expired hydro-test date.

1. Prepare Recycling/recovery equipment in accordance with manufacturer's instructions.
2. Drain the oil separator to ensure no contamination of the Refrigerant occurs.
3. Begin to withdraw liquid, vapor or both. Not all mechanical equipment is designed for access to the liquid Refrigerant. It is the responsibility of the Technician to determine from where to withdraw Refrigerant. Note: The ability to withdraw liquid is preferable for these reasons:
  - Liquid withdrawal removes many contaminants in suspension while vapor Recovery leaves them in the serviced System.
  - Water-charged heat exchangers will not freeze as readily.
  - Withdrawal may be quicker, though processing may not be.
4. If able to recover liquid, monitor the Recovery process until all liquid is recovered, then change to vapor-Recovery mode. Monitor the weight of Refrigerant in the recovery cylinder at all times. Do not overfill cylinders.
5. Ensure that EPA-mandated vacuum levels are reached and record levels achieved.
6. Use a digital or hanging scale to record the amounts of Refrigerant Recovered.
7. After reaching the required vacuum level, isolate the equipment, turn off the recovery unit, and watch the gauges. An increase in pressure may indicate additional Refrigerant in the equipment requiring additional recovery.
8. When recovery is complete, secure all equipment and proceed with the Repair or other action.

The table below provides additional information to help guide recovery efforts:

RECOVERY TROUBLESHOOTING	
If using:	Then:
An empty recovery cylinder	Evacuate to ensure no contamination occurs.
An unknown/unlabeled recovery cylinder that already contains Refrigerant	Determine or test Refrigerant quality and type.
A recovery unit equipped with an automatic low pressure shutoff	Wait and watch for at least five minutes after the unit shuts off when System goes into vacuum to determine whether all liquid and residual vapors have been withdrawn. A rise in pressure indicates more Refrigerant to Recover.
A recovery unit which automatically restarts on System pressure rise	Let it cycle until all possible Refrigerant has been Recovered. This type of unit must not be operated unattended.
A refrigeration unit with a suspected air-side or water-side leak	Recover only to atmospheric temperature to prevent air from entering the System and document this action.

### Mixed Refrigerants

When Refrigerants are unintentionally mixed, they are known as “mixed Refrigerants” (as opposed to commercially available zeotropic or azeotropic “blends”). Refrigerants should never be mixed together; mixed Refrigerants adversely impact performance and capacity of operating Systems, equipment operating costs, and equipment warranties. Cost of Disposal of mixed Refrigerants is higher than for non-mixed Refrigerants.

To reduce the probability of unintentionally mixing Refrigerants, follow these guidelines:

- Properly clear recovery devices, or dedicate recovery devices to a specific Refrigerant.
- Dedicate cylinders to a specific Refrigerant. Cylinders used for Recovered/Recycled Refrigerants should be marked to clearly indicate the Refrigerant.
- Ensure that containers are free of oil and other contaminants. Recovery of liquid Refrigerant can increase the likelihood of contaminated cylinders because of oil entrainment.
- Keep accurate records of Refrigerant inventory and use.

Determine the presence of mixed Refrigerants with a laboratory test; or check the saturation pressure and temperature of the Refrigerant in the System and compare with the published values for this Refrigerant in a pressure-temperature chart. If you discover your Appliance or System contains mixed Refrigerants, Evacuate and Recycle or Reclaim the Refrigerant; then return to System.

### Storage of Refrigerants

Store Refrigerant outdoors whenever possible. Do not store more than 330 pounds of Refrigerant in a machinery room outside an Appliance or System (see ASHRAE 15 and 26). If Freon® is stored inside in other than machinery rooms, ensure adequate ventilation is installed and maintained in the space.

The Refrigerant in all cylinders containing Freon and stored for use at the Facility will be tracked on *Form F-Freon Tracking Log* and identified by cylinder number.

# Lubricants

### Use of Lubricants in Refrigeration Systems

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Use only the type of lubricant that is specified by both the System and Refrigerant manufacturers. Do not mix lubricants in Systems. Mixing of lubricants can cause System problems.

### Lubricants – Disposal

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Refrigerant oil is considered a hazardous waste if it contains more than 4,000 parts per million (ppm) of dissolved Refrigerant and if it is not headed for reclamation. Most Refrigerant oil that has been exposed to a refrigeration System or a recovery process contains greater than 5,000 ppm of dissolved Refrigerant and acid gas. It is the contracted Disposal service's responsibility to determine if used oil does or does not exceed the regulatory limits for toxicity characteristic (TC) constituents. Used oil that fails the TC must be disposed of in accordance with hazardous waste regulations. Because used oil from refrigeration equipment may contain appreciable levels of contaminants, it is important to maintain records that document the source of the oil and its ultimate Disposal.



**NOTE: Do not mix used Refrigerant oils with other types of used oil!**

# **Regulatory Requirements Glossary**

## Glossary

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*Many of these terms are also defined in EPA regulations at 40 C.F.R. Part 82, Subpart F, and/or in the Consent Decree.*

**Appliance or Refrigeration Appliance** (per the Consent Decree) means all Industrial Process Refrigeration Appliances, as defined in 40 C.F.R. § 82.152, that are located in Ocean Companies' Facilities and that "normally contain" (as defined in 40 C.F.R. §§ 82.152) more than 50 pounds of Refrigerant. Large, custom-built assemblages of refrigeration equipment at a single Facility that share a single Refrigerant charge and constitute a single closed-loop refrigeration System, are a single Refrigeration Appliance for the purpose of the Consent Decree. The words **System** and **Appliance** are used interchangeably in this manual.

**Approved Equipment Testing Organization** means any organization which has applied for and received approval from the Administrator pursuant to 40 CFR 82.160.

**Certified Refrigerant Recovery or Recycling Equipment** means equipment manufactured before November 15, 1993, that meets the standards in 40 CFR 82.158(c), (e), or (g); equipment certified by an Approved Equipment Testing Organization to meet the standards in 40 CFR 82.158(b), (d), or (f); or equipment certified pursuant to 40 CFR 82.36(a).

**CFC** Chlorofluorocarbons (CFCs) are gas or liquid compounds that contain atoms of chlorine, fluorine, and carbon. CFCs are used as Refrigerants, solvents, foam blowing agents, and in other smaller applications.

**Class I Substances** means those substances that exceed a certain threshold with regard to ozone-depletion potential, including CFCs and Halons (NOTE: Production and importation of CFCs and Halons is no longer permitted under the Montreal Protocol. All use will cease as acceptable Substitutes are found.). The list of Class I Substances can be found at 40 C.F.R. Part 82, Appendix A to Subpart A.

**Class II Substances** means those substances that are below the Class I Substance threshold for ozone-depleting potential. The list of Class II Substances can be found at 40 C.F.R. Part 82, Appendix B to Subpart A. Currently, all HCFCs are Class II Substances.

**Commercial Refrigeration** means, for the purposes of 40 CFR 82.156(i), the Refrigeration Appliances utilized in the retail food and cold storage warehouse sectors. Retail food includes the refrigeration equipment found in supermarkets, convenience stores, restaurants and other food service establishments. Cold storage includes the equipment used to store meat, produce, dairy products, and other perishable goods of the equipment contains large Refrigerant charges, typically over 75 pounds.

**Current Charge** means the measured amount of Refrigerant in an Appliance that has been set at the start of a Refrigerant Year, in accordance with the procedures described in this manual and in the Consent Decree. The Consent Decree uses this term in lieu of "Full Charge."

**Disposal** means the process leading to and including:

1. The discharge, deposit, dumping or placing of any discarded Appliance into or on any land or water;



2. The disassembly of any Appliance for discharge, deposit, dumping or placing of its discarded component parts into or on any land or water; or
3. The disassembly of any Appliance for reuse of its component parts.

**Drawdown/Evacuate** means to remove something (as gas or water) from, especially by pumping.

**Facility or Facilities** means the following Facilities owned or operated by Ocean Companies in Westport, Washington: The ice manufacturing Facility ("Icehouse") operated by Ocean Gold and located on the Point Chehalis dock.

**Follow-Up Verification Test** means, for the purposes of 40 CFR 82.156(i), those tests that involve checking the Repairs within 30 days of the Appliance's returning to Normal Operating Characteristics and Conditions. Follow-Up Verification Tests for Appliances from which the Refrigerant charge has been Evacuated means a test conducted after the Appliance or portion of the Appliance has resumed operation at Normal Operating Characteristics and Conditions of temperature and pressure, except in cases where sound professional judgment dictates that these tests will be more meaningful if performed prior to the return to Normal Operating Characteristics and Conditions. A Follow-Up Verification Test with respect to Repairs conducted without evacuation of the Refrigerant charge means an additional verification test conducted after the Initial Verification Test and usually within 30 days of Normal Operating Conditions. Where an Appliance is not Evacuated, it is only necessary to conclude any required changes in pressure, temperature or other conditions to return the Appliance to Normal Operating Characteristics and Conditions.

**Freon®** means, for purposes of this manual, any substances consisting in part or whole of Class I or Class II Ozone-Depleting Substances (such as CFCs, HCFCs, and Halons) that are used for heat transfer purposes and that provide a cooling effect. Because the only Refrigerants used by the Companies at this time are Freon®, this manual uses the terms **Freon®** and **Refrigerant** interchangeably. Other substances used for cooling purposes, such as ammonia and CO<sub>2</sub>, are not considered "Refrigerants," are not regulated in the same way and are not covered by this plan.

**Full Charge<sup>1</sup>** means the amount of Refrigerant required for Normal Operating Characteristics and Conditions of the Appliance as determined by using one or a combination of the following four methods:

1. Use the equipment manufacturer's determination of the correct Full Charge for the equipment;
2. Determine the Full Charge by making appropriate calculations based on component sizes, density of Refrigerant, volume of piping, and other relevant considerations;
3. Use actual measurements of the amount of Refrigerant added or Evacuated from the Appliance; and/or
4. Use an established range based on the best available data regarding the Normal Operating Characteristics and Conditions for the Appliance, where the midpoint of the range will serve as the Full Charge.

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<sup>1</sup> Note that the Consent Decree requires the use of a specific current charge calculation while in effect. The definition of Full Charge will not be needed while complying with the Consent Decree.

**Halons** are compounds that contain bromine that are used primarily as fire extinguishing agents. Halons release ozone-destroying bromine, which is many times more effective at destroying ozone than chlorine.

**HCFC** Hydrochlorofluorocarbons (HCFCs), are a subset of CFCs. HCFCs are used primarily as Refrigerants and also deplete the ozone layer, though much less quickly than CFCs. As a result, HCFCs have been used as transitional Substitutes for CFCs as the United States moves toward eliminating use of Ozone-Depleting Substances.

**High-Pressure Appliance** means an Appliance that uses a Refrigerant with a liquid phase saturation pressure between 170 psia and 355 psia at 104 °F. This definition includes but is not limited to Appliances using R-401A, R-409A, R-401B, R-411A, R-22, R-411B, R-502, R-402B, R-408A, and R-402A.

**Holding Charge** means a small quantity of Refrigerant vapor or an inert gas, nitrogen, which is charged into a component of a refrigeration System while it is awaiting assembly; the charge is at slightly higher than atmospheric pressure in order to avoid the ingress of air and moisture into the component.

**Industrial Process Refrigeration** means, for the purposes of 40 CFR 82.156(i), complex customized Appliances used in the chemical, pharmaceutical, petrochemical and **manufacturing** industries. These Appliances are directly linked to the industrial process. This sector also includes industrial ice machines, Appliances used directly in the generation of electricity, and ice rinks. Where one Appliance is used for both Industrial Process Refrigeration and other applications, it will be considered Industrial Process Refrigeration equipment if 50 percent or more of its operating capacity is used for Industrial Process Refrigeration.

**Industrial Process Shutdown** means, for the purposes of 40 CFR 82.156(i), that a Facility temporarily ceases to operate or manufacture whatever is being produced on the Facility.

**Initial Verification Test** means, for the purposes of 40 CFR 82.156(i), those leak tests that are conducted as soon as practicable after the Repair is completed. An Initial Verification Test, with regard to the leak Repairs that require the evacuation of the Appliance or portion of the Appliance, means a test conducted prior to the replacement of the full Refrigerant charge and before the Appliance or portion of the Appliance has reached operation at Normal Operating Characteristics and Conditions of temperature and pressure. An Initial Verification Test with regard to Repairs conducted without the evacuation of the Refrigerant charge means a test conducted as soon as practicable after the conclusion of the Repair work.

**Leak Rate** means the rate at which an Appliance is losing Refrigerant, measured between Refrigerant charges. The Leak Rate is expressed in terms of the percentage of the Appliance's Current Charge (per the Consent Decree) that would be lost over a 12-month period if the current rate of loss were to continue over that period. The rate is calculated using only one of the following methods for all Appliances located at a Facility:

1. Method 1:

Step 1. Take the number of pounds of Refrigerant added to the Appliance to return it to a Full Charge and divide it by the number of pounds of Refrigerant the Appliance normally contains at Full Charge;

Step 2. Take the shorter of the number of days that have passed since the last day Refrigerant was added or 365 days and divide that number by 365 days;

Step 3. Take the number calculated in Step 1 and divide it by the number calculated in Step 2; and

Step 4. Multiply the number calculated in Step 3 by 100 to obtain a percentage.

**Method 1 is summarized in the following formula:**

*NOTE: Fraction obtained in STEP 2 has been inverted for STEP 3 (allowing multiplication of numbers obtained in STEPS 1 and 2 – per rules of math).*

$$\begin{array}{rclcl}
 \text{Leak Rate} & = & \text{STEP 1} & & \text{STEP 4} \\
 (\% \text{ per year}) & & \begin{array}{c} \text{pounds of} \\ \text{Refrigerant added} \\ \text{pounds of} \\ \text{Refrigerant} \\ \text{in Full Charge} \end{array} & \times & \begin{array}{c} \text{STEPS 2 and 3} \\ \text{365 days per year} \\ \text{shorter} \\ \text{of:} \\ \text{(a) \# of days since} \\ \text{Refrigerant was last} \\ \text{added, or} \\ \text{(b) 365 days} \end{array} & \times & 100\%
 \end{array}$$

## 2. Method 2:

Step 1. Take the sum of the quantity of Refrigerant added to the Appliance over the previous 365-day period (or over the period that has passed since leaks in the Appliance were last Repaired, if that period is less than one year),

Step 2. Divide the result of Step 1 by the quantity (e.g., pounds) of Refrigerant the Appliance normally contains at Full Charge, and

Step 3. Multiply the result of Step 2 by 100 to obtain a percentage.

**Method 2 is summarized in the following formula:**

$$\begin{array}{rclcl}
 \text{Leak Rate} & = & \text{STEPS 1 and 2} & & \text{STEP 3} \\
 (\% \text{ per year}) & & \begin{array}{c} \text{pounds of} \\ \text{Refrigerant} \\ \text{added:} \end{array} & & \begin{array}{c} \text{(a) over previous 365-day period, or} \\ \text{(b) since leaks were last Repaired, if} \\ \text{that period is less than one year} \end{array} & \times & 100\% \\
 & & \text{pounds of Refrigerant} & & & & \\
 & & \text{in Full Charge} & & & & 
 \end{array}$$

**Low-Loss Fitting** means any device that is intended to establish a connection between hoses, Appliances, or recovery or Recycling machines and that is designed to close automatically or to be closed manually when disconnected, minimizing the release of Refrigerant from hoses, Appliances, and recovery or Recycling machines.

**Low-Pressure Appliance** means an Appliance that uses a Refrigerant with a liquid phase saturation pressure below 45 psia at 104 °F. This definition includes but is not limited to Appliances using R-11, R-123, and R-113.

**Medium-Pressure Appliance** means an Appliance that uses a Refrigerant with a liquid phase saturation pressure between 45 psia and 170 psia at 104 °F. This definition includes but is not limited to Appliances using R-114, R-124, R-12, R-401C, R-406A, and R-500.

**Mothballing** means the intentional shutting down of a Refrigeration Appliance or System undertaken for an extended period of time by the owners or operators of the Facility, where the Refrigerant has been Evacuated from the Appliance or System, or the affected isolated section of the Appliance or System, at least to atmospheric pressure.

**MVAC (Motor vehicle air conditioner)** means any Appliance that is a motor vehicle air conditioner as defined in 40 CFR part 82, subpart B.

**MVAC-Like Appliance** means mechanical vapor compression, open-drive compressor Appliances with a normal charge of 20 pounds or less of Refrigerant used to cool the driver's or passenger's compartment of an off-road motor vehicle. This includes the air-conditioning equipment found on agricultural or construction vehicles. This definition is not intended to cover Appliances using R-22 Refrigerant.

**Non-Exempt Substitute** means any chemical or product, whether existing or new, that is used by any Person as an EPA approved replacement for a Class I or II Ozone-Depleting Substance that is not exempt from deliberate Venting (exempted Substitutes are **ammonia** in commercial or Industrial Process Refrigeration or absorption units, **hydrocarbons** in Industrial Process Refrigeration, **chlorine** in Industrial Process Refrigeration, **carbon dioxide** in any application, **nitrogen** in any application, or **water** in any application.

**Normal Operating Characteristics or Conditions** means, for the purposes of 40 CFR 82.156(i), temperatures, pressures, fluid flows, speeds and other characteristics that would normally be expected for a given process load and ambient condition during operation. Normal Operating Characteristics and Conditions are marked by the absence of atypical conditions affecting the operation of the Refrigeration Appliance.

**Normally Containing** a quantity of Refrigerant means containing the quantity of Refrigerant within the Appliance or Appliance component when the Appliance is operating with a Full Charge of Refrigerant.

**Opening An Appliance** means any service, maintenance, Repair, or Disposal of an Appliance that would release Refrigerant from the Appliance to the atmosphere unless the Refrigerant was Recovered previously from the Appliance. Connecting and disconnecting hoses and gauges to and from the Appliance to measure pressures within the Appliance and to add Refrigerant to or Recover Refrigerant from the Appliance shall not be considered "opening."

**Ozone-Depleting Substances (ODS)** are compounds that contribute to stratospheric ozone depletion. ODS include chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs), Halons, methyl bromide, carbon tetrachloride, hydrobromofluorocarbons, chlorobromomethane, and methyl chloroform. Class I and Class II substances are Ozone-Depleting Substances.

**Parent Company** means an individual, corporation, partnership, association, joint-stock company, or an unincorporated organization that can direct or cause the direction of management and policies of another entity, through the ownership of shares or otherwise.

**Person** means any individual or legal entity, including an individual, corporation, partnership, association, state, municipality, political subdivision of a state, Indian tribe, and any agency, department, or instrumentality of the United States, and any officer, agent, or employee thereof.

**PSIG** means pound-force per square inch gauge.

**Purge** means to rid, clear, or free of something.

**Reclaim** Refrigerant means to reprocess Refrigerant to certain specifications and to verify that the Refrigerant meets these specifications.

**Recover** Refrigerant means to remove Refrigerant in any condition from an Appliance and to store it in an external container without necessarily testing or processing it in any way.

**Recovery Efficiency** means the percentage of Refrigerant in an Appliance that is Recovered by a piece of Recycling or recovery equipment.

**Recycle** Refrigerant means to extract Refrigerant from an Appliance and clean Refrigerant for reuse without meeting all of the requirements for reclamation. In general, Recycled Refrigerant is Refrigerant that is cleaned using oil separation and single or multiple passes through devices, such as replaceable core filter-driers, which reduce moisture, acidity, and particulate matter. These procedures are usually implemented at the field job site.

**Refrigerant** means, for purposes of this manual, any substances consisting in part or whole of Class I or Class II Ozone-Depleting Substances (such as CFCs, HCFCs, and Halons) that are used for heat transfer purposes and that provide a cooling effect. Because the only Refrigerants used by the Companies at this time are Freon®, this manual uses the terms **Freon®** and **Refrigerant** interchangeably. Other substances used for cooling purposes, such as ammonia and CO<sub>2</sub>, are not considered "Refrigerants," are not regulated in the same way and are not covered by this plan.

**Refrigerant circuit** means the parts of an Appliance that are normally connected to each other (or are separated only by internal valves) and are designed to contain Refrigerant.

**Refrigerant Year or RY** (per the Consent Decree) means the period between March 15 of each calendar year and March 14 of the subsequent calendar year, as delineated in the following table:

Refrigerant Year (RY)	Dates
2016	3/15/2016-3/14/2017
2017	3/15/2017-3/14/2018

2018	3/15/2018-3/14/2019
2019	3/15/2019-3/14/2020
2020	3/15/2020-3/14/2021

**Repair** means to restore to sound condition after damage or injury; fix.

**Retire** means to take out of use. Owners or operators who Retire and **replace** an Appliance must replace the Appliance with an Appliance that uses a Refrigerant or Substitute with a lower or equivalent ozone-depleting potential.

**Retrofit** means to install (new or modified parts or equipment) in something previously manufactured or constructed. Owners or operators who decide to Retrofit the Appliance must use a Refrigerant or Substitute with a lower or equivalent ozone-depleting potential than the previous Refrigerant.

**Self-Contained Recovery Equipment** means Refrigerant Recovery or Recycling equipment that is capable of removing the Refrigerant from an Appliance without the assistance of components contained in the Appliance.

**Small Appliance** means any Appliance that is fully manufactured, charged, and hermetically sealed in a factory with five (5) pounds or less of a Class I or Class II substance used as a Refrigerant, including, but not limited to, refrigerators and freezers (designed for home, commercial, or consumer use), medical or industrial research refrigeration equipment, room air conditioners (including window air conditioners and packaged terminal air heat pumps), dehumidifiers, under-the-counter ice makers, vending machines, and drinking water coolers.

**Stratosphere** is the upper part of the earth's atmosphere, characterized by an almost constant temperature throughout its altitude, which begins at about seven miles and continues to about 50 miles. The Stratosphere is characterized by the presence of ozone gas (in the ozone layer) and by temperatures which rise slightly with altitude, due to the absorption of ultraviolet radiation.

**Substitute** means any chemical or product, whether existing or new, that is used by any Person as an EPA approved replacement for a Class I or II Ozone-Depleting Substance in a given refrigeration or air-conditioning end-use.

**System** means any device, no matter how large or small, which contains and uses a **Refrigerant** and which is used for household or commercial purposes, including any air conditioner, refrigerator, chiller, or freezer. A **closed-loop System** is considered to be a **single Appliance** or **single System**. The terms **System** and **Appliance** are used interchangeably in this manual.

**Technician** means any Person who performs maintenance, service, or Repair, that could be reasonably expected to release Refrigerants from Appliances, except for MVACs, into the atmosphere. Technician also means any Person who performs Disposal of Appliances, except for Small Appliances, MVACs, and MVAC-Like Appliances, that could be reasonably expected to release Refrigerants from the Appliances into the atmosphere. Performing maintenance, service, Repair, or Disposal could be reasonably expected to release Refrigerants only if the activity is reasonably expected to violate the integrity of the Refrigerant circuit. Activities reasonably expected to violate the integrity of the Refrigerant circuit include activities such as attaching and detaching hoses and gauges to and from the Appliance to add or

remove Refrigerant or to measure pressure and adding Refrigerant to and removing Refrigerant from the Appliance. Activities such as painting the Appliance, rewiring an external electrical circuit, replacing insulation on a length of pipe, or tightening nuts and bolts on the Appliance are not reasonably expected to violate the integrity of the Refrigerant circuit. Performing maintenance, service, Repair, or Disposal of Appliances that have been Evacuated pursuant to 40 CFR 82.156 could not be reasonably expected to release Refrigerants from the Appliance unless the maintenance, service, or Repair consists of adding Refrigerant to the Appliance. Technician includes but is not limited to installers, contractor employees, in-house service personnel, and in some cases owners and/or operators.

**Trigger Leak Rate (or Trigger Rate)** are Leak Rates set by EPA for refrigeration Systems that normally contain a Full Charge (Current Charge per the Consent Decree) of more than 50 pounds. If these Leak Rates are exceeded, additional action must be taken. See the discussion of Leak Rates in the manual for more detail.

**Troposphere** is the lower layers of atmosphere, in which the change of temperature with height is relatively large. It is the region where clouds form, convection is active, and mixing is continuous and more or less complete.

**Vent** means to release or discharge (gas, for example) through an opening.

**Very High-Pressure Appliance** means an Appliance that uses a Refrigerant with a critical temperature below 104 °F or with a liquid phase saturation pressure above 355 psia at 104°F. This definition includes but is not limited to Appliances using R-13 or R-503.